AGL Hydro

Bushfire Mitigation Plan 2023-2024

AGL Hydro AEL Reference: ML AL FI 01 (Rev5.8)

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Plan Revision History

Date	Version	Author	Comment	Sections
1.0	1 July 2016	S. Cariss	Initial 2016/17 Draft	All
1.1	11 Sep 2016	All	BMP Working Group Review	All
2.0	1 Oct 2016	S. Cariss	Release 2016/2017	All
2.1	28 Dec 2016	S. Cariss	Revised to include ESV Comments	All
3.0	01 Aug 2017	S. Cariss	BMP Working Group Review	All
3.1	12 Feb 2018	S. Cariss	Amendments following recommendations from ESV (Greg Sieburn)	Section 2 Section 7.4.1 Section 7.5 Section 13
4.0	01 Aug 2018	S. Cariss	BMP Working Group Review	All
4.1	07 Dec 2018	S. Cariss	Website URL updated	Section 2
4.2	27 June 2019	S. Cariss	Annual review AGL Hydro	All
4.3	09 July 2020	S. Cariss	Annual review AGL Hydro	All
4.4	25 Aug 2020	S. Cariss	ESV review feedback	Regulation Ref 6(h) Section 7.4.1 Section 9.5 Section 10.1
5.0	18 June 2021	S. Cariss	Annual AGL Hydro review	All
5.1	29 June 2021	S. Cariss	Minor changes resulting from the annual review and following the ESV Line Clearance Plan Systems Audit.	All
5.2	6 April 2022	S. Cariss	Changes resulting from the ESV BMP Audit concluding in April 2022.	All
5.3	27 May 2022	S. Cariss, Stu McQ and Col P	Changes resulting from the annual AGL Hydro review.	All
5.4	5 Sept 2022	S. Cariss	Changes to incorporate ESV feedback during the annual acceptance review	Section 1.1 (Exemptions) Section 2 (URL reference) Section 11 (No fire starts)
5.5	29 Mar 2023	S. Cariss	Changes following annual review with all nominated responsible persons: Minor changes in wording to better reflect current practices plus changes to images of our asset register and maps following upgrade improvements.	All Sections Appendices (Maps)
5.6	4 Sept 2023	S. Cariss	Changes to incorporate ESV feedback during the annual acceptance review	All Sections
5.7	28 Sept 2023	S. Cariss	Further changes to incorporate ESV formal evaluation responses before full acceptance is granted.	**Section 1.1** Missing registered company names and ACN for AGL Hydro Partnership. **Section 9.2.1** Certificate II in Asset Inspection and Certificate II in ESI (Powerline Vegetation) UET reference updated to the latest equivalent UET20621. **Section 13.1** Reference to DELWP updated to DEECA
5.8	02 Oct 2023	S. Cariss	Further changes to incorporate ESV feedback on completed corrective order commitments arising from the last 3yr inspections.	**Section 8.3.6** Updated tale to include completed unserviceable pole replacements completed: • SAP WO #410093719 • SAP WO #410093734 • SAP WO #410093735

Distribution

Copy	Position
1	AGL Hydro Reception
Electronic File	Energy Safe Victoria
Electronic File	Head of Hydro
Electronic File	Hydro Operations Manager
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Electronic File	Hydro Permits and Planning Manager
Electronic File	Works Team Leader - Eildon
Electronic File	Works Team Leader - Outlying Works
Electronic File	AGL Hydro Web Site
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1. Regulation Compliance Summary

1.1. Victorian Regulation Compliance

Electricity Safety (Bushfire Mitigation) Regulations 2023

Regulation 6: Prescribed particulars for bushfire mitigation plans – Specified Operators

Specified operator legal entity
Victorian Assets: AGL Hydro Partnership Pty Limited (ABN 86 076 691 481) • AGL HP1 Pty Limited (ACN 080 429 901) • AGL HP2 Pty Ltd (ACN 080 810 546) • AGL HP3 Pty Limited (ACN 080 735 815 NSW Assets: AGL Southern Hydro (NSW) Pty Ltd (ABN 73 056 452 601)

Reg	Requirement	Reference in this Plan
6 (1)(a)	the name, address, and telephone number of the specified operator	Responsible Persons (Section 2)
6 (1)(b)	the position, address and telephone number of the person who was responsible for the preparation of the plan	Responsible Persons (Section 2)
6 (1)(c)	the position, address and telephone number of the persons who are responsible for carrying out the plan	Responsible Persons (Section 2)
6 (1)(d)	the telephone number of the specified operator's control room so that persons in the room can be contacted in an emergency that requires action by the specified operator to mitigate the danger of bushfire	Responsible Persons (Section 2)
6 (1)(e)	the bushfire mitigation policy of the specified operator to minimise the risk of fire ignition from its at-risk electric lines	Policy (Section 4)
6 (1)(f)	the objectives of the plan to achieve the mitigation of fire danger arising from the specified operator's at-risk electric lines	Objectives (Section 5)
6 (1)(g)	a description, map or plan of the land to which the bushfire mitigation plan applies, identifying the location of the specified operator's at-risk electric lines	Scope (Section 6)

Reg	Requirement	Reference in this Plan
6 (1)(h)	the preventative strategies and programs to be adopted by the specified operator to minimise the risk of the specified operator's at-risk electric lines starting fires	Preventative Strategies (Section 7)
6 (1)(i)	a plan for inspection that ensures that all of the specified operator's at-risk electric lines are inspected at regular intervals of no longer than 37 months	Inspection Programs (Section 8)
6 (1)(j)	details of the processes and procedures for ensuring that each person who is assigned to carry out the inspections referred to in paragraph (i) has satisfactorily completed a training course approved by Energy Safe Victoria and is competent to carry out such inspections	Qualifications, Training and Competency (Section 9)
6 (1)(k)	details of the processes and procedures for ensuring that persons (other than persons referred to in paragraph (j)) who carry out or will carry out functions under the plan are competent to do so	Operations and Maintenance Plans (Section 10)
6 (1)(l)(i)	the operation and maintenance plans for the specified operator's at-risk electric lines — in the event of a fire	Operations and Maintenance Plans (Section 10)
6 (1)(l)(ii)	the operation and maintenance plans for the specified operator's at-risk electric lines — during a total fire ban day	Operations and Maintenance Plans (Section 10)
6 (1)(l)(iii)	the operation and maintenance plans for the specified operator's at-risk electric lines — during a fire danger period	Investigations, Analysis and Methodology (Section 11)
6 (1)(m)	the investigations, analysis and methodology to be adopted by the specified operator for the mitigation of the risk of fire ignition from its at-risk electric lines	Processes and Procedures (Section 12)
6 (1)(n)(i)	details of the processes and procedures by which the specified operator will— monitor the implementation of the bushfire mitigation plan	Processes and Procedures (Section 12)
6 (1)(n)(ii)	details of the processes and procedures by which the specified operator will— Verification the implementation of the plan	Processes and Procedures (Section 12)

Reg	Requirement	Reference in this Plan
6 (1)(n)(iii)	details of the processes and procedures by which the specified operator will— identify any deficiencies in the plan or the plan's implementation	Processes and Procedures (Section 12)
6 (1)(n)(iv)	details of the processes and procedures by which the specified operator will— change the plan and the plan's implementation to rectify any deficiencies identified under subparagraph (iii)	Qualifications, Training and Competency (Section 9)
6 (1)(n)(v)	details of the processes and procedures by which the specified operator will— monitor the effectiveness of inspections carried out under the plan	Processes and Procedures (Section 12)
6 (1)(n)(vi)	details of the processes and procedures by which the specified operator will— Verification the effectiveness of inspections carried out under the plan	Processes and Procedures (Section 12)
6 (1)(o)	the policy of the specified operator in relation to the assistance to be provided to fire control authorities in the investigation of fires near the specified operator's at-risk electric lines	Assistance Provided to Fire Control Authorities (Section 13)
13 (1)	Energy Safe Victoria may, in writing, exempt a specified operator or major electricity company from any of the requirements of these regulations.	No exemptions have been issued by ESV.
13 (2)	An exemption under sub regulation (1) may specify conditions to which the exemption is subject.	

1.2. NSW Regulation Compliance

This plan is provided to meet the objectives and requirements of the NSW Electricity Supply (Safety and Network) Regulation 2014 in accordance with AS5577. This includes consideration of industry codes, guidelines, and practices as well as published standards. The primary objective of this plan is to ensure AGL Hydro's Hydro electrical infrastructure and associated sub-networks at our NSW small Hydro sites is safe in its design, construction, and operation and to support:

(a) safety of members of the public

(b) the safety of persons working on networks

(c) the protection of property

(d) the management of safety risks arising from the protection of the environment (for example, preventing bush fires that may be ignited by network assets)

2. Responsibilities

2.1. Responsible Persons

Regulation 6	Specification – Contact Details
6 (1)(a) Name, address and telephone number of the specified operator	***Simon Kelley*** ***Head of Hydro*** AGL Hydro Kiewa Valley Hwy Mt Beauty 3699 Phone: 0429 002 094 Email: skelley@agl.com.au
6 (1)(b) Position, address, and telephone number of the person who was responsible for the preparation of the plan	***Stuart Cariss*** ***Operations and Electrical Safety Manager*** AGL Hydro Kiewa Valley Hwy Mt Beauty 3699 Phone: (03) 5754 3225 Email: scariss@agl.com.au
6 (1)(c) Position, address and telephone number of the persons who are responsible for carrying out the plan	***Martin Stawski*** ***Maintenance Manager*** AGL Hydro (Hydro) Kiewa Valley Hwy Mt Beauty 3699 Phone: 0498 632 036 Email: mstawski2@agl.com.au
6 (1)(d) Telephone number of the specified operator's control room so that persons in the room can be contacted in an emergency that requires action by the specified operator to mitigate the danger of bushfire	***AGL Generation Dispatch Center (24/7)*** ***Duty Generation Dispatcher*** 699 Bourke St Melbourne 3000 Phone: (03) 5754 3142 Email: agldc@agl.com.au
Information, including a copy of the Plan is available to be viewed by the state regulatory agencies or members of the public at AGL Hydro office located at Kiewa Valley Highway Mt Beauty or by appointment during normal business hours. A copy of the Plan is also available on the AGL internet site at: https://www.agl.com.au/about-agl/how-we-source-energy/hydroelectric-power-stations	

2.2. Management Structure and Responsibilities

The AGL Hydro management structure with respect to this plan is as follows. Please also refer to Section 17.1 of this plan for the supporting organisation structure.

Head of Hydro - responsible for:

- Overall management of AGL Hydro
- Timely completion and actioning of bushfire mitigation strategies; and
- Ensuring the actions of AGL Hydro meet legislative requirements.

Operations and Electrical Safety Manager – responsible for:

- Compliance and Verification of the bushfire mitigation plan
- Ensure proper liaison with other fire attack and land management agencies; and
- Ensure the administration of the Bushfire Mitigation Plan meets legislative requirements

Maintenance Manager – responsible for:

- Ensuring all outstanding work is completed in a timely manner and adequate resources are made available for the implementation of the plan

Planning and Compliance Officer -— responsible for:

- Ensuring all electric line vegetation and asset maintenance routines are developed and scheduled in SAP
- Ensuring all outstanding compliance issues are addressed and to ensure that matters are communicated to senior management
- Ensuring all compliance and Verification outcomes are reported to the Operations and Maintenance Managers in a timely manner; and
- Development of the verification report prior to the declared fire season

Works Team Leaders (Civil and Electrical) -— responsible for:

- Day to day operation of electric line vegetation and asset maintenance is in accordance with this plan and planned work schedule
- Allocation of contracts, with the responsibility of ensuring training and competencies are maintained in accordance with this plan. Refer 4.5
- Asset inspection, vegetation control program and liaison with other land management agencies in accordance with this plan; and

Electrical Engineer — responsible for:

- Provide scope and technical requirements for asset inspection work
- Review asset inspection reports including the assessment and verification of recommendations, and the prioritisation and subsequent creation of works management notifications
- Providing technical advice as required to ensure that the assets are maintained to the required compliance standard; and
- Assist with contractor evaluation and selection to ensure they are technically competent and can provide the required levels of service.

3. References

3.1. Victorian

- AGL Hydro Line Clearance Plan 2023-2024
- AGL Hydro Electricity Safety Management Scheme 2022 (Hydro)
- AGL Hydro Electricity Safety Management Scheme 2022 (Yarrawonga)
- AGL Hydro Electricity Safety Management Scheme 2022 (Somerton)
- AGL Hydro Consultation, Communication and Dispute Resolution (HP AI AD 01)
- AGL Hydro Customer Complaints Policy
- Electricity Safety Act 1998
- Electricity Safety (Electric Line Clearance) Regulations 2020
- Electrical Safety (General) Regulations 2019
- Electricity Safety (Management) Regulations 2019
- Electricity Safety (Bushfire Mitigation) Regulations 2013
- Electricity Safety (Bushfire Mitigation Duties) Regulations 2017
- Australian Standard AS4373 Pruning of Amenity Trees

3.2. New South Wales

- AGL Hydro Installation Safety Management Plan (ISMP) – NSW Power Stations
- Line Clearance Plan 2023-2024
- Electricity Safety Act 1995
- Electricity (Consumer Safety) Act 2004 (Section 32)
- Electricity Supply (Safety & Network Management) Regulation 2014
- Service and Installation Rules 2019 of NSW
- NSW Code of Practice – Installation Safety Management Plan
- NSW Code of Practice – Managing Electrical Risks in the Workplace
- ISSC 4 – Guideline for Managing Vegetation Near Powerlines

4. Policy

Reg	Requirement
6 (1)(e)	the bushfire mitigation policy of the specified operator to minimise the risk of fire ignition from its at-risk electric lines.

AGL Hydro management and employees are committed to avoiding fire ignition caused by electrical assets and achieving compliance with relevant legislative and regulatory requirements while encouraging innovation, system improvement and the effective use of our flexible resources. AGL Hydro's policy is to mitigate as far as reasonably practicable the risk of fire starting from those at-risk assets that AGL Hydro own.

This Bushfire Mitigation Plan outlines the policies, procedures, standards, codes, and guidelines that AGL Hydro applies to construction, operation and management of our electrical infrastructure and sub-networks. The Plan also provides an overview of AGL Hydro's bushfire risk management strategies in relation to key stakeholders including local government, government agencies and emergency services.

AGL Hydro is committed to maintaining fire safe assets through:

- Periodic routine and non-routine inspection of the assets to identify the works necessary to maintain fire safety
- Operation programs to eliminate or mitigate the identified risks; and
- Monitoring and reporting regimes to measure the state of preparedness for the declared bushfire season and the effectiveness or programs.

5. Plan Objectives

Reg	Requirement
6 (1)(f)	the objectives of the plan to achieve the mitigation of fire danger arising from the specified operator's at-risk electric lines.

The objectives of AGL Hydro Bushfire Mitigation Plan are as follows:

- Public Safety, the Environment, and Property
- Reduce the risk of fire starting from its assets so as far as practicable
- To maintain a program of inspection of network assets and vegetation on a regular basis
- Vegetation management with compliance to minimum clearances and environmental practices
- Asset maintenance in accordance with AGL Hydro Asset Management Plans and AGL Technical Standards
- Liaise with fire attack and land management agencies in accordance with AGL Hydro emergency preparedness and response plans; and
- Measurement, monitoring, reporting, and verification of program achievement and performance including the rectification of non-conformances.

6. Scope

6.1. Overview

AGL Hydro assets forms a key part of the AGL Hydro fleet which has one of the largest privately owned portfolios of Renewable generation assets across Australia. AGL Hydro was established from the breakup of the former State Electricity Commission of Victoria and now operates hydroelectric power stations across Victoria and NSW. Our three primary hydroelectric schemes are in the Kiewa, Dartmouth and Eildon/Rubicon catchments.

All overhead electric lines outline in this section are in a Hazardous Bushfire Risk Areas (HBRA). Overhead electric line assets in Victoria are in the Kiewa, Dartmouth and Rubicon Hydro-electric Power Generation schemes. Overhead electric line assets in New South Wales are in the Pindari, Copeton, Burrendong, and Glenbawn Power Station switchyards located at the base of Water NSW owned and operated dams. Maps identifying the areas where the assets are located are provided in the appendices of this plan.

6.2. Electric Line Assets

6.2.1. Kiewa Scheme

The Kiewa scheme comprises low voltage power pole assets and high voltage steel gantry switchyard assets.

Low voltage power pole assets total 34of supplying station services (reticulated low voltage supplies) to power stations and ancillary power station generation assets including water harvesting infrastructure. Overhead line assets are a combination of wood, steel and concrete poles comprising a mixture of wood and steel cross arms, line insulators, ground stays, bare overhead conductor, and aerial bundled cables.

High voltage power station switchyard assets total 3of (McKay Creek Power Station – 11/220kV, West Kiewa Power Station – 11/220kV and Clover Power Station – 11/66kV) with steel overhead gantry assets used for export of power generation to the scheme connection point with Ausnet Services located in each switchyard.

6.2.2. Dartmouth Scheme

The Dartmouth scheme comprises high voltage steel gantry switchyard assets. High voltage power station switchyard assets total 2of (Dartmouth Power Station – 15.5/220kV and Banimboola Power Station – 11/22kV) with steel overhead gantry assets used for export of power generation to the scheme connection point with Ausnet Services located in each switchyard.

6.2.3. Rubicon Scheme

The Kiewa scheme comprises low voltage power pole assets and high voltage steel gantry switchyard assets.

Low voltage power pole assets total 8of supplying station services (reticulated low voltage supplies) to power stations and ancillary power station assets including water harvesting infrastructure.

High voltage power pole assets total 57of (22kV and 6.6kV) used for export of power generation to the scheme connection point with Ausnet Services at Rubicon A zone substation.

Overhead line assets are a combination of wood, steel and concrete poles comprising a mixture of wood and steel cross arms, line insulators, ground stays, bare overhead conductor, and aerial bundled cables.

There is approximately 2.5km's of 22kV overhead line connecting Lower Rubicon Power Station to the Ausnet Services electricity distribution network at Rubicon A zone substation and is strictly managed by the AGL Hydro Electric Line Clearance Management Plan. This line passes through 11of private landholders. Refer to Section 16.2.1 in this plan.

High voltage power station switchyard assets total 3of (Lower Rubicon Power Station – 6.6/22kV, Rubicon Power Station – 6.6/22kV, Rubicon Falls Power Station – 6.6/22kV and Royston Power Station – 6.6/22kV) with steel overhead gantry assets used for export of power generation to the scheme connection point with Ausnet Services located in each switchyard.

6.3. Maps

Reg	Requirement
6 (1)(g)	a description, map, or plan of the land to which the bushfire mitigation plan applies, identifying the location of the specified operator's at-risk electric lines.

Refer to Appendices for the following maps of the land and location of at-risk electric lines mapped and managed through the AGL Hydro Arc-GIS software:

- Kiewa Hydro Scheme Assets
- Dartmouth Hydro Scheme Assets
- Eildon and Rubicon Hydro Scheme Assets
- NSW Hydro Scheme Assets

6.4. Private Overhead Electric Lines

All AGL Hydro overhead line assets are either used for the transmission of generated electricity to the distribution network supplier point of connection or used for the consumption of electricity from the distribution network supplier point of connection. AGL Hydro is not a retailer that supplies customers via POEL's.

7. Prevention Strategies

Reg	Requirement
6 (1)(h)	the preventative strategies and programs to be adopted by the specified operator to minimise the risk of the specified operator's at-risk electric lines starting fires.

AGL Hydro applies an Asset Management approach to ensure efficient and effective management of our assets through full-service lifecycle. AGL Hydro's strategies to mitigate bushfire risk are covered by two broad programs of work comprising vegetation management, and asset condition monitoring and renewal.

The core bushfire mitigation prevention strategies adopted by AGL Hydro as part of the broad programs of work include:

- Asset Management
- Network Asset Inspection Program
- Network Vegetation Inspection Program
- Asset and Vegetation Inspection Schedules
- Engineered Solutions
- Management Processes
- Operational and Electrical Safety Programs

7.1. Asset Management

The AGL Hydro asset management programs shall:

- Identify and locate all network assets
- Record the condition of the assets
- Record the date of network asset assessments
- Identify assets subject to approved replacement, modification or maintenance programs; and
- Generate action reports, showing the priority where maintenance or repair works are required.

The asset management program comprises several components, some of which include the Works Management System (SAP), the GIS (Arc GIS) and manual field data captures.

The Electric Line Asset Management Procedure (MP AL HV 01) describes the roles and process for management, inspection, and documentation of all electric line network assets installed within the AGL Hydro network.

7.1.1. Works Management System

The Works Management System (SAP) is utilised to manage the work program. The system manages the flow of work through the organisation from initiation, design, scheduling, construction, action, and closure through to work status reporting and tracking. The jobs that are managed by the system include construction, planned maintenance and reactive work.

The Works Management System (SAP) includes an integrated capability to ensure that all components of a work tasks such as cost estimation, materials ordering, work scheduling and project management are automatically initiated and tracked.

7.1.2. Geographical Information System

GIS records data about the assets and the geographic location of the network assets that are managed using Arc GIS application platform. The Arc GIS platform provides the ability to display the assets geographically and their spatial relationship with each other and are organised and identified on a geographic basis.

7.2. Network Asset Inspection Program

7.2.1. General

The purpose of our network asset prevention strategies is to assess and record the condition of our network assets by inspection and, where appropriate by testing, the condition of network assets.

Monitoring of the AGL Hydro overhead electric line assets condition includes scheduled patrols of the lines and scheduled inspection and verification tasks. Any defect or condition issue identified through patrols shall be managed through AGL reactive work management processes where the issue is captured through a notification, assessed, and then prioritised for rectification.

There is also a potential for non-routine maintenance required following severe weather events, such as storms with high winds or hail where the line assets may be damaged or compromised by debris. Corrective actions identified through patrols will be managed in accordance with the AGL Hydro Work Management Standard processes and practices to minimise the risk of bushfire initiation.

Condition based monitoring of network assets considers the replacement, modification, and maintenance due to network and electric line clearance condition assessments based on cyclic inspection programs, trend analysis and risk assessment of fire risk, including the implementation of appropriate controls and planned or unplanned work programs.

The core bushfire mitigation network inspection programs adopted by AGL Hydro include:

General Inspections	Detailed Inspections	Thermographic Surveys
General inspections are carried out at one-week (1) and one-month (1) intervals by competent AGL Hydro employees.	Detailed network asset inspections are carried out on a 3-year cycle by competent and certified contracted asset inspectors.	As part of AGL Hydro's on-going asset management of the overhead lines, an independent thermographic survey is carried out bi-annually. The thermographic survey non-intrusively measures heat generated by high resistance joints

7.2.2. Network Asset Inspections

Asset inspection programs are to assess the condition of network generation assets, record test results and observations, and log results for further evaluation and action. Inspection programs have been designed for the surveillance of identified causes of fire ignition.

Our planned and scheduled detailed asset inspections programs are carried out on a 3-year cycle by competent and certified inspectors, and include the following:

Asset	Inspection
Cross-arms	Deterioration. Crack, splits, and hardware.
Poles	Damage; rust (steel) and cracks (concrete). Bowed, leaning and hardware.
Insulators	Cracks, tracking. Loose hardware and stains.

Asset	Inspection
Conductors	Corrosion, broken strands, ties. Clearance issues; and deformity
Connectors	Loose, broken, discoloured and conductor damage.
Stays	Wire damage; anchors. wooden insulator damage and eyebolts.
Transformers	Oil stains; bushings. Droppers and fusing.
ABS and switches	Insulators; switch and blade alignment; handles and earths.
Fusing and HV apparatus	Insulators; fuse conditions. Burn marks and tracking
Earthing	Connections and earth wires
Vegetation	Clearance items, species and location
Design	Assets that do not conform to current design standards

Visual asset inspections utilise binoculars and digital SLR cameras. Where possible concerns exist for pole top components or systems not fully visible from ground level, these shall be inspected using drone technologies. Asset inspections also include infrared condition assessments.

7.2.3. Routine Line Patrol Inspections

Routine line patrols from the ground are carried out on weekly (Rubicon Scheme) and monthly (Kiewa Scheme) schedules by AGL Hydro maintenance workers in accordance with the line patrol procedure checklists referenced in Section 18 of this plan. Non-scheduled patrols are undertaken as required for fault finding and following major weather events where damage may occur, or debris may be present.

The purpose and objective of these scheduled or non-scheduled routine line patrols is to assist AGL Hydro in the carrying out of this Bushfire Mitigation Plan, proactively focused on some of the known fire risk factors associated with the AGL Hydro network assets and are not designed to be comprehensive or to replace the need for competent and certified contracted asset inspectors.

At the same time a visual inspection is made of the vegetation near the line. Any concerns are forwarded to the Planning and Compliance Officer who will maintain the currency of information recorded in GIS/SAP and forward to the vegetation management contractor for prompt detailed inspection and action as required.

7.2.4. Network Pole Asset Performance and Health Index

AGL Hydro has timber structures that are inspected and assessed in accordance with the requirements of the standard AS/NZS 7000 including a Health Index (HI) greater than 1.0. (The 'Health Index' is the key performance measurement for serviceability and is calculated as 'factored strength over factored load').

Wooden structures are assessed using an infra-acoustic scanning technique (Woodscan®) to determine the residual strength at, or just above, ground line. Initially, the residual strength is determined as a percentage of the structure's original strength given its strength group and size attributes.

The serviceability criteria assume that all structures were designed to an industry safety factor of 2.5:1. Our contracted service providers recommend that a limited state engineering analysis is undertake to structures found to be limited life or unserviceable. Limited Life poles in the AGL Hydro network which have not been replaced or staked are to be re-inspected within 12 months.

The risk table applicable to our assessments is:

WoodScan® status	Sustained Health Index	Ultimate Health Index	Both Indices
Measure	< 1.0	< 1.0	=> 1.0
Serviceable	Medium	Low	Very Low
Limited Life	High	Medium	Low
Unserviceable	Critical	Very High	Medium

7.2.5. Maintenance from Scheduled Asset Inspection Program

It is the responsibility of the Planning and Compliance Officer to program the work generated from the monitoring inspection programs as soon as it appears in the Works Management System (SAP) to ensure all works are completed before the onset of the next fire danger period.

As the scheduled asset inspection is completed, the Planning and Compliance Officer will program, from SAP notifications, the following items:

- Defective poles to be replaced or reinstated before the fire danger period
- Missing, deteriorated or damaged pole top assets
- Unacceptable or damaged HV fuses and surge diverters
- Missing or damaged LV spreaders
- Missing, deteriorated or damaged conductor or conductor fittings; and
- Ensure the GIS/SAP database is to be updated as works are completed.

7.3. Network Vegetation Inspection Program

7.3.1. General

The purpose of our network vegetation management prevention strategies is to assess and record the condition of vegetation around our electric line assets through inspection. Vegetation inspection programs are to ensure our electric line assets are maintained in a safe and serviceable condition through assessment of the clearances between vegetation and network assets.

Monitoring of electric line clearance includes scheduled patrols of the lines and easements, and scheduled inspection and verification tasks. Any defect or condition issue identified through patrols shall be managed through AGL reactive work management processes where the issue is captured through a notification, assessed, and then prioritised for rectification.

7.3.2. Electric Line Clearance Inspections

Electric line clearance inspection programs are to assess the vegetation condition that has the potential to be a source of fire ignition, and to ensure our electric line easements are maintained in a safe and serviceable condition through assessment of the clearances between vegetation and network assets.

The core bushfire mitigation vegetation inspection programs adopted by AGL Hydro include:

General Inspections	Detailed Inspections
General powerline and easement vegetation inspections are carried out at one-week (1) and one-month (1) intervals by competent AGL Hydro employees.	Detailed powerline and easement vegetation inspections are carried out annually by competent and certified contracted asset inspectors prior to the fire season.

All conductor spans in all areas will have a detailed annual inspection prior to the start of the fire season to identify any trees infringing the clearance space and any other obvious line defects, which may be a cause of the ignition of fire. The annual inspection cycle ensures that as far as practicable that AGL Hydro always remains code compliant. Assessments are completed by suitably qualified arborist as described in the AGL Hydro Electric Line Clearance Plan.

Each annual assessment also includes the identification of any hazards outside the clearance and regrowth spaces that may require further assessment or correction. These areas may be adjacent to the clearance space or regrowth space for trees that could be become a hazard to the lines under adverse weather conditions.

Annual line clearance inspections are to be scheduled and executed in April each year by a suitably qualified Assessor. The timing of this inspection allows time for any rectification work to take place prior to that year's fire season. The Assessor will provide a report upon completion of the inspections.

The Civil Team Leader shall raise subsequent notifications in SAP for all rectification tasks highlighted in the report. The notification priority and required by end date on the notification shall reflect the recommended completion date set out in the report. The Civil Team Leader shall verify during the work centre planning meetings that the planner has scheduled these tasks accordingly.

Subsequent notifications, linked to the master routine, allow for simple reporting on progress and completion of tasks. The progress of subsequent work will be monitored during Hydro's weekly maintenance review meeting.

Non-routine inspections are completed following severe weather events, such as storms with high winds where the line assets may be damaged or compromised by vegetation. Corrective actions identified through patrols will be managed in accordance with the AGL Hydro Work Management Standard processes and practices to minimise the risk of bushfire initiation.

7.3.3. Electric Line Clearance Practices

The AGL Hydro Planner is responsible for developing the work pack in SAP prior to execution of the works. This includes, but is not limited to:

- Work Order detailing areas for inspection
- Authority to Mobilise forms
- JSEA
- Authority to Work (if required)

At the completion of any Electric Line Clearance (ELC) task, whether it be the initial routine or subsequent rectification work, any documents created during the execution of the task must be uploaded by the Civil Team Leader to the Work Order.

This includes, but is not limited to:

- Assessor's report
- Section Two of the Authority to Mobilise form
- Completed JSEA
- Completed Authority to Work

The Civil Works Team Leader is also responsible for monitoring the performance of the ELC contractors. Performance procedures relating to keeping vegetation clear of powerlines within the declared area are measured by the following:

- Number of trees in breach of the Regulation at date of audit
- Number of pruning cuts found below standard
- Number of external requests for pruning or external complaints
- Progress against cutting schedule; and
- Number of alternative approaches to normal pruning adopted:
    - Removal/replacement
    - Powerlines relocated underground
    - Other engineering solutions adopted

AGL Hydro will undertake compliance checks and auditing as outlined in ML AI FI 00 Electric Line Clearance Management Plan.

7.4. Inspection Schedules

The following Network Asset and Electric Line Clearance inspections are undertaken:

- Network Asset inspections are conducted on a 36-month cyclic rotation (+/- 1 month). Inspection results are recorded in the AGL Hydro works management system (SAP). Network Assets identified and assessed as limited life are inspected and tested annually.
- Electric Line Clearance inspections of all AGL Hydro line assets is conducted annually by an appropriately qualified contractor with results recorded in AGL Hydro works management system (SAP)
- Routine line patrols from the ground are scheduled and carried out weekly (Rubicon Scheme) and monthly (Kiewa Scheme) by AGL Hydro maintenance workers in accordance with the line patrol procedure checklists referenced in Section 18 of this plan.

All issues or actions arising from any of these inspections are entered as jobs in SAP (refer to the appendices) and prioritised below.

Priority/Code	Description
P1 (Immediate)	• Requires immediate remedial action
P2 (Break Schedule)	• Requires high priority remedial action within the current working week
P3 (Next Sched Week)	• Requires high priority remedial action within the next working week
P4 (Start 2-4 weeks)	• Requires remedial action within 2-4 weeks during fire & non fire season
P5 (Start 4+ weeks)	• Requires further assessment or remedial action within a period greater than 4 weeks in normal maintenance timeframes

7.5. Engineered Solutions

AGL Hydro provides asset management strategies for undertaking corrective (reactive) and preventive (pro-active) actions committed to avoiding fire ignition so far as is reasonably practicable caused by electrical assets and achieving compliance with relevant legislative and regulatory requirements.

Asset management strategies comprise engineered solutions including major capital upgrades, replacement of wood with galvanised steel (cross-arms) and consideration to underground infrastructure aimed at reducing risk through the prevention of further asset deterioration and failure and reducing ongoing operating and maintenance costs with respect to overhead lines and easements (refer to the appendices).

7.6. Operational and Electrical Safety Processes

7.6.1. General

AGL Hydro operational and electrical safety processes shall be in place to monitor and audit the implementation of the plan to identify any deficiencies in the plan or the plan's implementation, and to improve the plan and the plan's implementation if there are any deficiencies identified through:

- Fire Risk Assessments
- Summer readiness programs
- Management of Hot Works
- Maintain Fire Fighting equipment and reticulated water fire suppression system on site
- Maintain Site Emergency Response procedures
- Emergency Management Responses
- Training and Competency
- Rapid Earth Fault Current Limiter Protection
- Bushfire Mitigation Management Systems Review; and
- Energy Safe Victoria Audits

7.6.2. Risk Assessments

Fire risk assessments are used to assess the risk of causes and potential causes of fire ignition from the networks to enable appropriate action to minimise the risk. Fire risk assessments will be reviewed yearly and recorded as such, or when a change in plant or site conditions requires a review to be completed.

The objective is to carry out fire risk assessments for potential causes of ignition, and from the risk assessment, to implement appropriate actions in accordance with the AGL HSE risk management standard methodologies. Minimum controls outlined in the standard methodologies include:

- Risk Register
- Risk Assessment
- Safe System of Work framework
- Safe Work Method Statements; and
- Job Safety Environment Analysis.

The scope of the risk assessment covers the following:

- Sources of fire ignition that could be caused by electrical energy, during normal operations, faults, and maintenance activities, including external sources to site
- Nature and extent of combustible material that could be ignited by such sources of ignition and the probability that ignition could occur
- Influence of climatic and environmental conditions that are likely to occur during the declared fire danger period and days of total fire ban
- Coverage and effectiveness of any fixed fire protection systems available
- Emergency response capability, available on and off site
- Probability of spread of fire to other plant items and/or off site areas
- Identify risk mitigation strategies that will reduce the probability of occurrence of ignition from electrical assets, and/or the spread of fire appropriate to the identified risk.

7.6.3. Summer Readiness Program

Annually, AGL Hydro engages the expertise of AGL Integrated Energy Technical Services Team to review and assess the performance of the pre-summer inspection and operational programs in accordance with the AGL Summer Peak Readiness Programme Standard. These readiness reviews are normally conducted from September through to the start of the declared fire danger period.

The Planning and Compliance Officer must continually monitor SAP to ensure any maintenance identified outside of the normal asset inspection program (e.g. from the summer readiness program and management audits) are completed within the reporting and management review timeframes.

7.6.4. Hot Works

AGL Hydro Safe Systems of Work procedures requires a Permit for any work being undertaken on any AGL Hydro site, with special requirements and precautions taken where Hot Work is being undertaken. Risk Assessments for all Hot Works is required to ensure precautions are comprehensively detailed to always enable safe work conditions.

7.6.5. Maintaining Fire Fighting Equipment

All AGL Hydro firefighting equipment is inspected on a regular basis. Routine inspections and testing of equipment are conducted and completed at predetermined frequencies. Routines are automatically produced and sent via AGL Hydro Maintenance Management System (SAP), where routine work orders are sent to the responsible AGL Hydro maintenance leader to conduct and complete the inspections in accordance with appropriate codes of practice, regulations, or manufacturers requirements.

Fire Detection and alarm systems are installed to protect plant and equipment at AGL Hydro sites. The range of equipment includes heat sensing wire, thermal sensing devices and smoke detection.

Each system has fire alarm triggers, all connected to the Fire Indicator Boards (FIBs) located in strategic locations at each site. All activated fire alarms are personally investigated, prior to alerting emergency services. Very Early Smoke Detection Alarm (VESDA) systems are also installed throughout AGL Hydro power stations in high-risk areas including the Station Control Rooms, Control Systems Equipment Rooms, Station Cable Chambers, and Computer/Server/Telephony rooms.

Fixed firefighting equipment installations include water mains, hydrants, hose reels, and sprinkler systems. Each power station building is protected by a wet type of sprinkler deluge system.

AGL Hydro ensures adequate numbers and types of extinguishers that are located and easily identified throughout AGL Hydro sites. Fire extinguishers are maintained and managed on site by fire protection contractors with equipment repaired or replaced as needed.

7.6.6. Emergency Management Responses

AGL Hydro has an ‘Emergency Management Plan’ and ‘Emergency Preparedness and Response Procedures’ developed to ensure a coordinated response to emergency control at an AGL Hydro site regardless of the nature of the emergency (Evacuation, Fire, Serious injury, Bomb threat, Chemicals, Spills, etc) or the source of emergency.

The plan and procedures aims to provide a means that enables appropriate assistance to be sought from outside emergency services (Police, Fire Brigade, State Emergency Service and Ambulance) if required.

The procedures aims to:

- Limit the effect of the emergency on personnel, plant and the general environment
- Ensure the satisfactory communication of all vital information as soon as possible
- Facilitate a resumption of normal operations when appropriate
- Provide a basis for training personnel in the handling of emergency situations, and a system of emergency procedure review

7.6.7. Training and Competency

All personnel are trained to perform the tasks detailed within this plan. The training of personnel is managed and recorded by the AGL Hydro Training and Competency Lead. All personnel carrying out work on site are fully site inducted. The induction process states the minimum requirements for carrying out work on site, the need to report fires and provide firefighting assistance within their capabilities.

AGL Hydro have trained a large majority of our workforce in firefighting techniques as well as first aid. In the event of an incident requiring emergency response these people come together and an appropriate first response team is selected to respond, under the command of the AGL Hydro Incident Controller.

Any outbreak of fire requires the prompt response of well-trained and adequately equipped fire fighters with experienced leaders, effectively coordinated regardless of location or the asset threatened. AGL Hydro employees undertake non-discretionary fire training as minimum on the commencement of employment and refreshed every 3 years. Training consists of fire appreciation, hose, and foam techniques as well as extinguisher skills.

7.6.8. Rapid Earth Fault Current Limiter Protection

The Victorian Government recently introduced enhanced powerline fault detection and suppression requirements to reduce the risk of bushfires caused by faults on the state's regional and rural powerline distribution networks including Rapid Earth Fault Current Limiter (REFCL) protection. These requirements have been added to the Electricity Safety (Bushfire Mitigation) Regulations 2013 (Regulations) and form part of a raft of measures that have been undertaken as part of the Victorian Government Powerline Bushfire Safety Program (PBSP).

The only AGL Hydro assets impacted by the Victorian Distribution Networks REFCL program is the Rubicon 22kV line assets inside the AGL Hydro network. This network connects the AGL Hydro Rubicon Scheme 22kV overhead line infrastructure with the Ausnet Services connection point at Rubicon A Substation.

As part of AusNet Services instituted policy and strategy for all affected HV customers, AGL Hydro has since completed an upgrade replacement program of the AGL Hydro Rubicon Scheme 22kV overhead line infrastructure comprising new step-up isolation transformers, line isolators, line insulators, and line surge arrestors. These replacement upgrade works were completed to the satisfaction of Ausnet Services and their REFCL System Testing program and was deemed REFCL ready.

7.6.9. Bushfire Mitigation Management System Review

The Operations and Electrical Safety Manager (ESMS Manager) initiates an annual review of the effectiveness of the Bushfire Mitigation Plan, for completion by the end of March. The review includes:

- Recommendations, observations, and suggestions from the ESV or internal desktop audits
- Processes for monitoring, recording, and reporting
- Work management compliance processes
- Contractor management competency and compliance processes; and
- Plan performance measures.

The results of the review are reported to the Head of Hydro and any improvements and/or changes can then be included in the following years plan.

7.6.10. Energy Safe Victoria Audits

Energy Safe Victoria (ESV) may choose to conduct a desktop and field audit of the AGL Hydro Bushfire Mitigation Plan and the Electric Line Clearance Plan (LCP). Any field defects identified are actioned in accordance with the priority assigned and any recommendations, observations and suggestions from the

audits are reviewed and actioned immediately if required, or as part of the Bushfire Mitigation Management systems review.

7.7. Key Timings

Key timings for preventative strategies are as follows:

- The Bushfire Mitigation Plan (BMP) will be completed and submitted to Energy Safe Victoria prior to the 1st of July each year.
- The Electric Line Clearance Management Plan (LCP) will be completed prior to the 31st of March each year and submitted to Energy Safe Victoria upon request.
- The NSW HV customer Installation Safety Management Plans (ISMP) will be completed and available to the NSW transmission or distribution network companies prior to the 1st of September each year.
- Inspection program dates are triggered by SAP (refer to the appendices); and
- Timing for rectification works is determined by the priority status of work found.

8. Monitoring Program

Reg	Requirement
6 (1)(i)	a plan for inspection that ensures that all of the specified operator's at-risk electric lines are inspected at regular intervals of no longer than 37 months.

This section details the planned preventative maintenance commitments, activities and timing representing our quantitative plan for 2023/2024, including:

- Network Asset Inspection Program
- Network Vegetation Inspection Program
- Asset and Vegetation Inspection Schedules
- Engineered Solutions
- Management Processes
- Operational and Electrical Safety Programs

8.1. General

AGL Hydro assets and activities, including inspection and maintenance works, are managed in an automated internal asset management system (SAP). Preventative maintenance activities have been scheduled for all at-risk power lines to ensure instruction to carry out these works is automatically generated, and inspections are carried out at appropriate intervals.

8.2. Planned Preventative Schedule

The table below details all AGL Hydro planned preventative maintenance activities and timing which are managed, scheduled, and tracked in SAP.

Activity	*Frequency*	*Timing*
Routine Network Asset Inspections (Rubicon)	Weekly	N/A
Routine Electric Line Clearance Inspections (Rubicon)	Weekly	N/A
Routine Network Asset Inspections (Kiewa)	Monthly	N/A
Routine Electric Line Clearance Inspections (Kiewa)	Monthly	N/A
Routine Switchyard Inspections (Asset and Vegetation)	Monthly	N/A
Routine Access Track Inspections, Clearance, and Maintenance	Monthly	N/A

Activity	*Frequency*	*Timing*
Fire Appliance Testing (Chubb)	Bi-Annual	N/A
Fixed Fire Systems Testing (Deluges and Monitoring Systems)	Bi-Annual	N/A
Bushfire Mitigation Plan Review	Annually	March
Line Clearance Plan Review	Annually	March
Annual Switchyard Inspections (All Regions)	Annually	Scheduled
Fire Fighting Equipment Inspections (Portable)	Annually	September
Network Asset Inspections (Unserviceable and Limited Life)	Annually	September
Network Asset Inspection Verification Competency Review	3-yearly	April
Network Asset Inspections (Cycled over 36 months +/- 1 month)	36 months	April

8.3. Planned Preventative Commitments

8.3.1. Routine Annual Scheduled Commitments

The table below details all AGL Hydro planned preventative network asset and electric line clearance maintenance commitments in the 2023/24 plan which are managed, scheduled, and tracked in SAP.

Maintenance Order	*Activity*	*Frequency*	*Start Date*
420313029	RUP B00 1YR PWR LINE VEG AUDIT INSP	Annually	Complete
420313030	LRP B00 1YR PWR LINE VEG AUDIT INSP	Annually	Complete
420313033	ROP B00 1YR LV PWR LINE VEG AUDIT INSP	Annually	Complete
420313027	MBD B00 1YR PWR LINE VEG AUDIT INSP	Annually	Complete
420313028	CLP B00 1YR PWR LINE VEG AUDIT INSP	Annually	Complete
420337956	RUP M00 1YR LMTD LIFE POLE INSP	Annually	1/10/2023
420337957	ROP B00 1YR LMTD LIFE POLE INSP	Annually	1/10/2023
420337958	CLP B00 1YR LMTD LIFE POLE INSP	Annually	1/10/2023
420336517	MBD B00 1YR LMTD LIFE POLE INSP	Annually	1/10/2023
420291570	BOP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420291571	CLP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420291572	MKP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420291573	WKP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420302877	DPS B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420302878	BAP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420336459	EPS B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420336460	ROP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420336461	RFP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420336462	RUP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420336463	LRP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023
420344961	YAP B00 1YR THERMO SURVEY INSP	Annually	26/10/2023

8.3.2. Routine Weekly Scheduled Commitments

Maintenance Item	*Activity*	*Frequency*	*Start Date*
8001204	RUP B00 1WK PWR LN & ESMNT INSP	Weekly	N/A
8001204	ROP L/V Power Line & Easement Insp	Weekly	N/A
8001204	ROP-RUP 6.6kV Power Line & Easement Insp	Weekly	N/A
8001204	RUP-LRP 22kV Power Line & Easement Insp	Weekly	N/A
8001204	RUP L/V Power Line & Easement Insp	Weekly	N/A
8001204	RFP L/V Power Line & Easement Insp	Weekly	N/A
8001204	LRP L/V Power Line & Easement Insp	Weekly	N/A
8001204	Compile Reports	Weekly	N/A

8.3.3. Routine Monthly Scheduled Commitments

Maintenance Order	*Activity*	*Frequency*	*Start Date*
420300505	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420300507	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420305919	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420305921	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420310979	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420310981	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420316436	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420316434	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420321678	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420321940	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420326765	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420326767	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420331827	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420331829	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420336519	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420336517	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420341005	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420341007	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420345353	CLP B00 1MN PWR LINE & VEG INSP	Monthly	20th Day
420345355	MBD B00 1MN PWR LINE & VEG INSP	Monthly	20th Day

8.3.4. Routine 36 month Scheduled Commitments (+/- 1 month)

Maintenance Plan	*Activity*	*Frequency*	*Planned Date*
2003069	CLP B00 3YR POLE AUDIT INSP	36 months	1/10/2024
2022630	LRP B00 3Y POLE AUDIT INSP	36 months	1/10/2024
2003072	MBD B00 3YR POLE AUDIT INSP	36 months	1/10/2024

Maintenance Plan	Activity	Frequency	Planned Date
2002211	MKP B00 3YR POLE AUDIT INSP	36 months	1/10/2024
2022631	MSD B00 3Y POLE AUDIT INSP	36 months	1/10/2024
2003068	RFP B00 3YR POLE AUDIT INSP	36 months	1/10/2024
2003066	ROP B00 3YR POLE AUDIT INSP	36 months	1/10/2024
2002798	RUP B00 3YR POLE AUDIT INSP	36 months	1/10/2024
2003070	WKP B00 3YR POLE AUDIT INSP	36 months	1/10/2024

8.3.5. Limited Life Pole Commitments

Maintenance Plan	Activity	Planned Date
2003069	CLP B00 1YR LMTD LIFE POLE INSP • CLPA01ANA10WC003 - CLP BCRL POLE 961024	1/10/2023
2003072	MBD B00 1YR LMTD LIFE POLE INSP • MBDA01ANA10WC004 MBD POLE 961200 • MBDA01ANA10WC010 MBD POLE 961220	1/10/2023
2003066	ROP B00 1YR LMTD LIFE POLE INSP • ROPA01ANA10WC004 - ROP POLE 962014 (10LV) • ROPA01ANA10WC006 - ROP POLE 962016 (11SLV)	1/10/2023
2002798	RUP M00 1YR LMTD LIFE POLE INSP • RUPA01AJA10WB006 - RUP RUB A POLE 962090 (54A) • RUPA01AJA10WB012 - RUP RUB A POLE 962096 (59A) • RUPA01AJA10WB014 - RUP RUB A POLE 962098 (60) • RUPA01AJA10WB019 - RUP RUB A POLE 962103 (65) • RUPA01AJA10WB022 - RUP RUB A POLE 962106 (68) • RUPA01AJA10WB032 - RUP RUB A POLE 962124 (76) • RUPA01AJA10WB036 - RUP RUB A POLE 962128 (80) • RUPA01AJA10WB037 - RUP RUB A POLE 962129 (81) • RUPA01AJA10WB043 - RUP RUP A POLE 962135 (87)	1/10/2023

8.3.6. Corrective Order Commitments

Maintenance Order	Activity	Planned Date
410093719	Rubicon 962079 Pole – Unserviceable Pole Replacement	Complete
410093734	Rubicon 962121 Pole (73) – Unserviceable Pole Replacement	Complete
410093735	Rubicon 962134 Pole (86) – Unserviceable Pole Replacement	Complete
410118352	RUP1YRLMTDLIFEPOLEINSPComp Pole Inspection	Complete
410121536	MBD Trim trees behind workshop	Complete
430062512	BCRL, POWERPOLE, ARMOURING	Complete
410130990	MBD - Line Clearing from 2023 Veg Audit	Complete
410135838	Line Clearing-2023 Line Audit Pole 962016	18/09/2023
410135861	Line Clearing-2023 Rubicon 22kV Line	18/09/2023
410135862	Line Clearing-2023 Line Audit Pole 962117	18/09/2023
410136717	Rubicon 962122 Pole - Unserviceable Pole Replacement	9/10/2023
410115954	RFP 6.6kV Line Vegetation Clearance	24/06/2024

9. Qualifications, Training and Competency

Reg	Requirement
6 (1)(j)	details of the processes and procedures for ensuring that each person who is assigned to carry out the inspections referred to in paragraph (i) has satisfactorily completed a training course approved by Energy Safe Victoria and is competent to carry out such inspections.
6 (1)(k)	details of the processes and procedures for ensuring that persons (other than persons referred to in paragraph (j)) who carry out or will carry out functions under the plan are competent to do so.

This section outlines the process to be employed by all personnel, including contracted staff, carrying out asset inspections and tests carried out in a responsible manner and applies to all persons associated with this bushfire mitigation plan.

All personnel, including contracted staff, must have satisfactorily completed the required competency-based training and their performance verified on an annual basis.

Contractor training and competency verifications are completed prior to the work commencing through the AGL Hydro contractor engagement 'Authority to Mobilise' (ATM) and pre-qualification process and at the commencement of the site work.

The ATM and contractor verifications include:

- History of performance
- Safety track records
- Experience in relevant work
- Current insurance certificates
- High risk work Licenses of proposed workers
- Competencies of proposed workers
- Register of plant and equipment
- Preliminary risk assessments
- Completion of Site Inductions
- Knowledge of incident management protocols
- Knowledge of emergency response protocols

Any non-compliance issues are communicated to the relevant contractor or employee and corrective actions are taken immediately. All verifications are captured in myHSE and routinely reported on.

9.1. Qualifications, Training and Competencies

Workers shall only undertake work for which they have been trained, assessed, and deemed competent to enable them to safely perform work and all relevant contractors must have sufficient knowledge, training, qualifications, and experience to ensure that tree activities under their control are conducted in a safe and environmentally responsible manner.

AGL Hydro engages contractors to perform annual inspections of at-risk electric assets and all work is carried out by suitably qualified and licensed personnel having experience in the types of work as laid out in the VESI framework. AGL Hydro contractors who are suitably qualified will be considered as an "authorised person" or under the control of an authorised person under the Victorian High Voltage Code of practise on electrical safety for the work on or near high voltage electrical apparatus.

AGL Hydro records all contractor training and qualifications in the 'RAPID Global' and 'cm3' contractor management application systems including ensuring routine refresher training in relevant modules are current and work can be undertaken in a safe competent manner. Training records will be available prior to

commencement of works or made accessible via the individuals Australian ESI Skills Passport.

AGL Hydro will have a representative responsible for carrying out this plan on site at the commencement of the inspections/clearance to observe/conduct appropriate inductions and to provide permission to proceed after approving the site component of the 'Authority to Mobilise' (Part 2).

If AGL Hydro are unable to determine the currency of the contractors training and qualifications, work will not proceed. If any worker associated with the work tasks covered under this plan are found to be performing works outside of their capabilities or the prescribed documentation, they are supposed to be working under, then work will be immediately stopped, and the associated personnel removed from the site. All stop works are captured in myHSE and routinely reported on.

9.2. Competency and Refresher Requirements

9.2.1. Asset Management

The following table outlines the Units of Competency required to be undertaken for the applicable Asset Management and Inspection roles AGL Hydro. All Mandatory (M) units of competency shall be completed to undertake the role.

Qualification and Core Competency and Refresher Standard		Competency Standard Unit	Asset Inspector	Asset Inspector Trainee
Qualification				
Certificate II in Asset Inspection		UET20621	M	M
Apply ESI safety rules, codes of practice and procedures for work on or near electrical apparatus (Green Book / Blue book)		UETTDRRF01B	M	M
Prepare to work safely in the construction industry		CPCCOHS1001A	M	M
Working safely near live electrical apparatus as a non-electrical worker		UETTDREL14A	M	M
Refresher Requirements				
3 Yearly	Apply ESI safety rules, codes of practice and procedures for work on or near electrical apparatus (Blue book)	UETTDRRF01B	M	M
3 Yearly	Apply access procedures to work on or near electrical network infrastructure (Receive Access Permit)	UETTDRRF09B	M	M
3 Yearly	Control traffic with stop-slow bat	RIIWHS205D	M	M
3 Yearly	Implement traffic management plan	RIIWHS302D	M	M
3 Yearly	Manual Handling		M	M
3 Yearly	VESI Environmental Framework		M	M
3 Yearly	VESI Safety Framework		M	M
1 Year	Cardiopulmonary Resuscitation (CPR)	HLTAID001	M	M
1 Year	First Aid in an ESI environment	UETTDRRF10B	M	M
Other Requirements				
ESI Worker Card			M	M
Network Operator Induction			M	M

M – Mandatory; A – Additional (If worker requires for the works being performed)

9.2.2. Vegetation Management

The following table outlines the Units of Competency required to be undertaken for the applicable Vegetation role at AGL Hydro. All Mandatory (M) units of competency shall be completed to undertake the role.

9.2.2.1. Qualification and Competencies

Qualification and Core Competency Standard	Competency Standard Unit	Assessor	Cutter Working from EWP	Specialist Plant Operator	Tree Climber
Qualification					
Certificate II in ESI - Powerline Vegetation Control	UET20621	M	M	M	M
Apply ESI safety rules, codes of practice and procedures for work on or near electrical apparatus (Green Book / Blue book)	UETTDRRF01B	M	M	M	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	M			
Use elevated platform to cut vegetation above ground level near live electrical apparatus	UETTDRVC25A		M		
Operate specialist equipment at ground level near live electrical apparatus	UETTDRVC31A			A	
Use specialised plant to cut vegetation above ground level near live electrical apparatus	UETTDRVC32A			M	
Apply pruning techniques to vegetation control near live electrical apparatus	UETTDRVC33A		M	M	M
Undertake release and rescue from a tree near live electrical apparatus	UETTDRVC34A				M
Fell small trees	AHCARB202A		A	A	A
Undertake standard climbing techniques	AHCARB204A				M
Apply chemicals under supervision	AHCCHM201A		A	A	A
Operate machinery and equipment	AHCMOM304A		A	M	A
Recognise plants	AHCPCM201A	M	A	A	A
Operate a mobile chipper/mulcher	FPIHAR2206B		A	A	A
Licence to operate a boom-type elevating work platform (boom length 11 metres or more)	TLILIC2005A		M		

M – Mandatory; A – Additional (If worker requires for the works being performed)

9.2.3. Refresher Requirements

Frequency	Qualification and Core Competency Standard	Competency Standard Unit	Assessor	Cutter Working from EWP	Specialist Plant Operator	Tree Climber
3 Yearly	Apply ESI safety rules, codes of practice and procedures for work on or near electrical apparatus (Blue book)	UETTDRRF01B	M	M	M	M
3 Yearly	Apply access procedures to work on or near electrical network infrastructure (Receive Access Permit)	UETTDRRF09B	M	M	M	M
1 Year	Cardiopulmonary Resuscitation (CPR)	HLTAID001	M	M	M	M
1 Year	First Aid in an ESI environment	UETTDRRF10B	M	M	M	M
1 Year	EWP Controlled Descent Escape	UETTDRRF08B		M		
1 Year	EWP Rescue	UETTDRRF03B		M		
1 Year	Undertake release and rescue from a tree near live electrical apparatus	UETTDRVC34A				M

M – Mandatory; A – Additional (If worker requires for the works being performed)

10. Operations and Maintenance Plans

10.1. Response to Fire Emergencies

Reg	Requirement
6 (1)(l)(i)	the operation and maintenance plans for the specified operator's at-risk electric lines — in the event of a fire

Response to fire emergencies shall be in accordance with the AGL Hydro Emergency Management Plan (EMP) and Emergency Response and Preparedness Procedures. The EMP has been developed to ensure that AGL Hydro can respond effectively to emergency situations associated with the AGL Hydro assets.

The EMP contains details of the key processes of notification, escalation and mobilisation, the source and organisation of resources and the actions which should be considered and is part of an overall plan of the company framework for Emergency Response and Preparedness Management at AGL Hydro.

In the event of fire which prevents the safe operation of the HV overhead line, the line will be deenergised to minimise further ignition sources. Where the fire is in the area but presents minimal or no risk to the safe operation of the overhead line, the overhead line will continue to operate.

10.2. Days of Total Fire Ban and Fire Emergencies

Reg	Requirement
6 (1)(l)(ii)	the operation and maintenance plans for the specified operator's at-risk electric lines — during a total fire ban day
6 (1)(l)(iii)	the operation and maintenance plans for the specified operator's at-risk electric lines — during a fire danger period

10.3. Approvals

Where such tasks need to be performed to ensure the security and safety of the network all permits required by the government fire service agencies, or under codes of practice, regulations, or statutory requirements, will be obtained.

AGL Hydro has a standard procedure in applying for Fire Rescue Victoria (FRV) Permits and Internal Permits to assess, approve and allow any Hot Works to be carried out. During days of Total Fire Ban only essential works will be undertaken under specific fire controls, and where possible, hot works are rescheduled or avoided.

AGL Hydro Safe Systems or Work procedures (SP AL SA 50) reference Hot Work and Fire Danger Period. FRV Permit also defines the process for obtaining a total fire ban exemption for essential works. The relevant FRV Permit will be held in the AGL Hydro Permit to Work system for quick and easy access.

All Hot Work applications are assessed as to the criticality of the work to be performed outdoors before a Permit is issued. All approved Hot Work site areas are inspected to ensure compliance with the FRV permits for use of open flames, welding, cutting, and grinding during declared Fire Danger Periods. Notification is then given to FRV regarding hot work being performed on days of Total Fire Ban.

10.4. Notifications

On days of Total Fire Ban and emergencies, the AGL Generation Dispatcher will inform AGL Hydro team leaders of the declaration days of total fire ban, verbally and in writing before 7:30 am. Team leaders will organise to reschedule any planned works that may be considered by government fire service agencies, or under codes of practice, regulations, or statutory requirements, to pose a risk of fire ignition.

10.5. Line Protection Systems

AGL Hydro does not have any reclose suppression line protection systems. Subject to safe access, AGL Hydro high voltage pole assets in the Victorian Rubicon State Forest high risk area will be visually inspected subject to safe access, prior to 9:00am on Total Fire Ban days. Any potential hazards will be reported to the Eildon Maintenance Team Leader and the AGL Hydro Maintenance Manager for further action and risk assessment.

10.6. Recording

Records of events and instructions for days of Total Fire ban will be kept by AGL Hydro Dispatch Centre electronic logs for inspection by regulatory and government fire service agencies if required. The AGL Maintenance Manager will remain in close liaison with government fire service in the approach to the fire season to confirm season start date.

11. Investigations, Analysis and Methodology

Reg	Requirement
6 (1)(m)	the investigations, analysis, and methodology to be adopted by the specified operator for the mitigation of the risk of fire ignition from its at-risk electric lines.

11.1.1. Report to Energy Safe Victoria

Electrical events/faults, if they influence risk of fire ignition from the AGL Hydro at-risk electric lines or not, are recorded and reported using AGL Hydro 'myHSE Event Report'. AGL Hydro has had no fire starts from at risk electric lines.

Electrical events/faults that are assessed to be a 'Serious Electrical Event', are reported separately to ESV (and/or WorkSafe Victoria) in accordance with Regulation 401.

> *A serious electrical incident means an incident involving electricity which causes or has the potential to cause the death or injury to a person or significant damage to property or A serious risk to public safety.*

All reports of serious electrical incidents shall be made to ESV's emergency response line on 1800 000 922 and followed up in a detailed written report and sent to ESV within 20 business days of the initial report. For faults/incidents/defects requiring further internal investigation the AGL 'Incident Reporting and Investigation Procedure' is followed.

11.2. Fire Reporting and Investigations

AGL Hydro undertakes to report, investigate, and analyse all fire ignitions originating from its electric line assets.

11.2.1. Definitions

Fires are categorised under two definitions as follows:

- Fire: the ignition of combustible materials on the ground including trees and other vegetation possibly caused by AGL Hydro assets; and
- Significant Fire: a fire which causes injury or death, or significant damage to stock or property which includes trees, pasture and fencing possibly caused by AGL Hydro assets.

11.2.2. Fire Reporting Procedures

Should a fire occur, which may have been caused by AGL Hydro assets it is to be reported by:

- A telephone report to the AGL Hydro Dispatch Center, Works Team Supervisor, Operations Manager and Head of Hydro
- An HSE incident raised in the AGL Hydro HSE Management System (myHSE) – Refer to Section 17.3 in this plan

When reporting fires causing minimal damage, and where it is unlikely that there will be any media involvement, the Head of Hydro, Operations Manager and Maintenance Manager must be provided with at least the following information:

- Status of the fire (ie. out, under control etc.)
- Attendance of any other authority (Police, CFA)
- Date and time of discovery
- Pole number
- Locality or line/spur name
- Injured personnel

- Material damage
- Line voltage
- Possible cause; and
- Details of preliminary information from the initial site inspection.

In the event of a significant fire, or if media involvement is likely, the Works Team Supervisor, Operations Manager and Head of Hydro are to be provided with the following information, in addition to that above, as soon as possible:

- Name of the person reporting the fire
- Whether AGL Hydro Employees are still on site; and
- If the police attended the incident.

Fire Report information must be submitted within 48 hours of first notification of the incident. Sufficient detail is to be included to allow a full understanding of the incident (including weather, pole/cross arm materials, conductor materials, etc.).

11.2.3. Investigations

In the event of any fire involving AGL Hydro assets; the Operations Manager with the assistance of the Maintenance Manager is to initiate an investigation into the cause and effects of the fire and produce, if necessary, a plan for minimising the likelihood of a further similar occurrence.

Upon receiving notification of the Event, the responsible Leader must classify the Event, in consultation with the relevant Health and Safety or Environment Business Partner, to determine if it is:

- High Potential Event (deemed to be High Risk and above using AGL's Fully Integrated Risk Management matrix);
- SIF Actual or SIF Potential;
- Potential Lost Time Injury/Illness or Medical Treatment Injury/Illness; or
- Regulatory Reportable; or
- Voluntary Notifiable to a Regulator.

An investigation shall commence as soon as possible or within two calendar days of the Investigator receiving the workflow to complete the investigation and where practicable must be completed within 14 calendar days of the Investigator receiving the workflow.

An investigation timeframe may be extended after consultation with the relevant Head of Function and Health and Safety or Environment Manager/Business Partner. Investigation findings, recommendations and action plans will be forwarded to the regulatory agencies for all notifiable incidents.

11.3. Reporting and Lessons Learned

AGL has HSE Event Initial Briefs and Lessons Learned are used to communicate important health and safety or environment information, advising people of significant events and/or potential risks associated with a High Potential/ SIF Actual/ Potential Event that may have an immediate impact at a local site and/or the wider business.

The Head of Function is responsible for ensuring HSE Initial Briefs and Lessons Learned are developed, in consultation with the Health and Safety or Environment Manager and Operations in accordance with the AGL-HSE-PRO-006.1 HSE Communications Framework.

11.3.1. Initial Reports

All Events must be entered into myHSE within 24 hours of the Event occurring. The information should be entered by the person involved, or if unable to do so, any other person that may have been involved in the Event or delegated the task of entering the information in myHSE by the person or involved person's Leader.

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Contractor incidents, near misses and hazards must be entered into myHSE by the Contractor or by the responsible Contract Manager or Delegate (if the Contractor does not have access to myHSE) in accordance with the terms of the contract. Access to myHSE is through The Source (AGL intranet), SAP Mobile App or SAP Business Client.

On final submission, the person entering details of the Event must ensure the appropriate responsible Leader (which may be different to the person's immediate Leader) is selected to ensure the correct workflows are initiated. The appropriate responsible Leader would generally be associated with the site or location where the Event took place.

11.3.2. Leader Verification

Once the Event has been logged in myHSE, a workflow will be triggered to the responsible Leader to complete the Leader Verification step. The responsible Leader must complete this verification within 3 calendar days of receiving the workflow. As part of the Leader Verification, the responsible Leader is required to review and verify the following details:

- Description of the Event is as accurate as reasonably possible.
- Appropriate Event Group and Type.
- Work relatedness of Event (Health and Safety Events only).
- Injury/Illness Type and Classification: Lost Time, Medical Treatment, First Aid or Register of Injury/Illness (Health and Safety incidents only).
- Risk classification of Event and determine the type of investigation required; and
- Assign Investigator

11.3.3. Initial Briefs

HSE Event Initial Briefs must be issued within 24 hours of the Event occurring, where practicable.

Details of the HSE Initial Brief need to include, but not be limited to:

- Relevance to e.g. all personnel, or electrical workers.
- Description of Event.
- Immediate actions taken e.g. cease operations, toolbox to staff on incident.
- Extent of injury/damage to people, plant and /or environment; and
- Actions initiated at the Event site. e.g. Complete investigation.
- Actions that other sites should undertake to prevent a similar Event

Lessons Learnt are developed after an investigation is completed and approved, where there are key messages and actions for the local and/or wider business to take away and implement.

11.3.4. Lessons Learned

Details of the Lessons Learned need to include, but are not limited to:

- Relevance to e.g. all personnel, or electrical workers.
- Description of Event.
- Key Investigation Findings
- Key Lessons to be Shared
- Key Actions for Managers, Supervisors and Workers to prevent a similar even

11.4. Assistance from Fire Agencies for Fires near Network Assets

The following processes apply when assistance is required from fire agencies for fires near network assets:

- Appointed contact persons — in the event of an incident affecting any AGL Hydro asset, the Duty Generation Dispatch Person in the Dispatch Center fulfils the initial 24/7 response coordination and shall notify the Hydro Maintenance Manager or delegate for escalation and allocation of resources.

- Access to assets - for personal safety reasons no unauthorised access to AGL Hydro high voltage plant/apparatus by any fire authority or personnel is permitted without prior approval from an Authorised AGL Hydro person. Authorised AGL Hydro Persons are responsible for the site emergency response and site attendance necessary to meet and escort fire agencies.
- Information exchange - AGL Hydro shall maintain a free exchange of information to all fire control agencies to enable a rapid, appropriate response to all incidents. The Maintenance Manager will use this information exchange to best advantage to identify risks to and from AGL Hydro assets and effectively apply lessons learned from past events to manage future fire risk.

12. Processes and Procedures

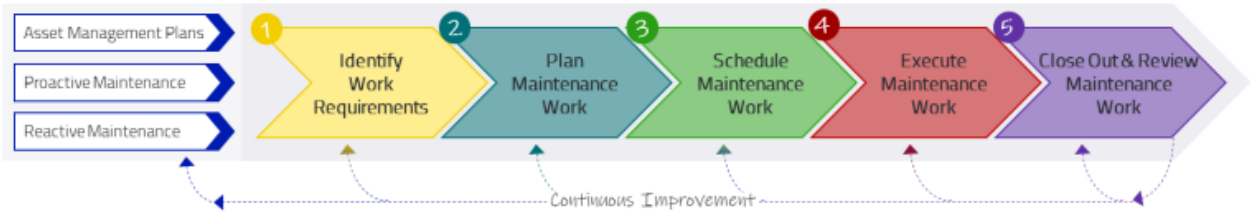
12.1. Implementation Monitoring

Reg	Requirement
6 (1)(n)(i)	details of the processes and procedures by which the specified operator will— monitor the implementation of the bushfire mitigation plan

12.1.1. General

Monitoring the implementation of the plan is performed predominantly through the use and management of the AGL Hydro SAP works management standard and systems which records any required scheduled (Planned) or unscheduled (Reactive) works including, but not limited to, the preventative works listed in this plan.

The standard applies to AGL Integrated Energy Operations employees and contractors and covers the requirements associated with the five core elements of Work Management (WM):



12.1.2. Performance Indicators

The specific measure is AGL Hydro Maintenance & Reliability key performance indicators that illustrate the health of our work management system and processes against industry best practice used to drive continuous improvement across the AGL Hydro fleet.

KPI	Units	Definition
Reactive Work	%	Maintenance work that interrupts the weekly schedule, calculated as a percentage of total maintenance labour hours.
Proactive Work	%	Maintenance work that is completed to avoid failures or to identify defects that could lead to failures. Includes routine preventive and predictive maintenance activities and corrective work tasks identified from them.
Schedule Compliance	%	Measure of adherence to the maintenance schedule, expressed as a percent of total number of scheduled work order operations and include the percentage of the scheduled operations completed.

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KPI	Units	Definition
Overdue Work Orders	%	Measures all active maintenance work orders (e.g., ongoing, not closed) in the system not completed by due date. This includes all corrective, preventive and predictive maintenance work orders
PM & PdM Compliance	%	Measure of completed preventive maintenance (PM) and predictive maintenance (PdM) work orders, the evaluation is against the planned finish date for executing and completing the work.

12.1.3. Work History and Analysis

Work History and records shall be used in analysis feedback. Maintenance history provides the ability to obtain meaningful information to assist in improving maintenance effectiveness. Analysis feedback shall consider why the maintenance task had to be performed and the effectiveness of the Maintenance Strategy, Condition Monitoring, Planning, Scheduling and Execution of the work.

The following table outlines the AGL Hydro Works Management work history analysis frequency and required tasks.

Frequency	Responsible Person and Responsibility
Daily Requirements	The Maintenance Supervisor is responsible for reviewing maintenance history and work executed daily to review how work is progressing and identify any risks to the schedule execution and compliance, identifying any work that may require time confirmation(s), re-planning, re-scheduling or other corrective actions to meet schedule requirements.
Weekly Requirements	The Maintenance Manager is responsible for coordinating the review and analysis of maintenance history with relevant stakeholders, such as Operations Manager, Team Leaders, Planning Manager, Planners and Engineering. Weekly reports should be prepared for discussion at the 7+7/Draft Schedule Review meeting and any corrective actions captured with owners assigned. Weekly review should consist of: • Safety related items • Maintenance KPIs • Cost Analysis • Adherence to Maintenance plans and schedules • Actions to address any issues
Engineering Review	Engineering is responsible for also regularly reviewing asset history data and analysing history to determine best corrective actions which may include reliability, engineering, or routine maintenance improvements.

12.1.4. Continuous Improvement

AGL Hydro Maintenance & Reliability key performance indicators measure the effectiveness of the Work Management Process and plans and schedules shall be subject to post-execution review and continuous improvement. AGL Hydro undertakes a weekly review to discuss performance and areas for improvement, as per the 7+7 meeting.

Performance measurement is a fundamental principle of management as it identifies the current performance level along with any gap between current and desired performance, and the following performance indicators are reported at an Integrated Energy Operations level and a Business Unit level to drive continuous improvement.

12.1.5. Preparedness Reviews

AGL Hydro will undertake annual reviews of its bushfire preparedness in relation to overhead line assets and generation structures. Plan reviews by Senior Leaders, and other nominated staff, will be held annually to validate; the plan; the efficiency of maintenance programs, program compliance, and program relevance.

A pre-summer 'Summer Readiness' verification program governed by AGL's Integrated Energy Technical Services Team references the AGL Hydro Bushfire Mitigation Plan and AGL Hydro Electric Line Clearance Plan activities and is conducted on an annual basis.

Plan reviews by Senior Leaders, include:

- Operations and Electrical Safety Manager
- Maintenance Manager
- Electrical Engineer
- Planning and Compliance Officer
- Works Team Leader (Civil)
- Works Team Leader (Electrical); and
- Other nominated personnel as deemed necessary.

Note: A delegate may be nominated in the absence of one of the above Leader.

Plan reviews will include checks and assessments of the following:

- Planning and Scheduling Tasks
- Monitoring Inspections
- Network Asset Register
- Network Asset Condition Reports
- Electric Line Clearance Reports
- Urgent work
- Communication effectiveness with the fire service agencies; and
- Response to days of Total Fire Ban and high fire danger

All issues or actions arising from any of these reviews are entered as jobs in the SAP works management system (refer to the appendices) and prioritised. The Maintenance Manager oversees each plan review and coordinates follow-up action to verify the implementation of the corrective action and that a works management work order is raised and tracked.

12.1.6. Plan Effectiveness and Monitoring

Other performance measures which will be collated and reviewed annually prior to the resubmission of this plan to ESV include:

- Scheduled task management compliance including vegetation inspection (compliance with vegetation clearances) and line clearance work, rectification works, cyclic asset replacement, and all relevant work specific to this plan.
- Number of electrical events/faults that have occurred on the relevant Electric Lines with the cause identified to be directly related to their condition and/or compliance with the Regulations.
- Annual Number of Fire Starts
- Number of Stakeholder complaints/correspondence received in relation to the relevant Electric Lines as measured through AGL Hydro's community and communications department.
- Lost Time Injuries (LTI's) or Medical Treatment Injuries (MTI's) with the cause identified to be directly related to the Electric Lines
- Future Electric Line Clearance Plan submitted by 30th June each year.

The results of plan reviews that identify deficiencies in the procedures or the plan implementation associated with the management of bushfire mitigation are added to the HSE management system and action register for further action and tracking. This register tracks the issue, responsible person, and progress status. The results of each plan review including the documented actions are advised to the Hydro Leadership Team.

The change to a procedure or this plan will be implemented in a timely manner depending on the significance of the issue identified. All items identified will be incorporated into the next annual revision of the bushfire mitigation plan.

12.2. Implementation Verification

Reg	Requirement
6 (1)(n)(ii)	details of the processes and procedures by which the specified operator will— Verification the implementation of the plan

Plan implementation verification is largely done as part of the annual review process prior to resubmission of this plan to ESV and a review prior to the declared fire danger period, which will be undertaken by a representative responsible for carrying out this plan, and which includes:

- That the qualifications and experience of personnel performing any scheduled inspection and/or clearance works adheres to both ESV's and this plans requirements
- All inspections and scheduled compliance reports have been submitted to the persons responsible for carrying out this plan.
- All corrective actions as per the plan and recommendations have been entered in the AGL Hydro SAP works management systems; and
- All inspections, reports, and subsequent corrective actions have been completed in line with the scope/timing of recommendations and to the quality of this plan and the applicable Acts, Regulations, Codes and Standards.

12.3. Implementation Deficiencies

Reg	Requirement
6 (1)(n)(iii)	details of the processes and procedures by which the specified operator will— identify any deficiencies in the plan or the plan's implementation

Identification of any deficiencies in the plan or the plan's implementation is achieved through the following processes and procedures:

- The annual review process of this plan prior to resubmission to ESV
- Persons carrying out this plan to provide feedback to their Leader and/or the person/s responsible for the preparation of this plan when a deficiency is found.
- Monthly review of site/asset risk registers; and
- AGL Hydro critical control checks and workplace safety and environment observation/conversation program which requires employees and leaders to have routine observation/conversation which are entered into the AGL Hydro myHSE systems.

12.4. Changes to the Plan's Implementation

Reg	Requirement
6 (1)(n)(iv)	details of the processes and procedures by which the specified operator will— change the plan and the plan's implementation to rectify any deficiencies identified under subparagraph (iii)

Changes to the plan and the plan's implementation if any deficiencies are identified are performed during the annual review of this plan prior to resubmission to ESV.

If there are more critical changes required to important information, including but not limited to, contact details or applicable procedures/policies these will be performed as soon as possible and resubmitted to ESV. The updated plans will then be reloaded into the AGL Hydro enterprise library and on the AGL Hydro webpage listed in the plan.

The annual review of this plan is performed by the persons responsible for preparing the plan in conjunction with the other stakeholders and responsible persons listed in this plan. These include, but is not limited to, updating the plan for any new or revised Legislation, Regulations or Codes, industry practices and Electric Line configurations and/or locations.

12.5. Monitor Effectiveness of Inspections

Reg	Requirement
6 (1)(n)(v)	details of the processes and procedures by which the specified operator will— monitor the effectiveness of inspections carried out under the plan

Monitor the effectiveness of inspections under the plan will be performed through the annual review of the performance measures listed in Section 8 by the persons responsible for preparing the plan.

12.6. Verification of the Effectiveness of Inspections

Reg	Requirement
6 (1)(n)(vi)	details of the processes and procedures by which the specified operator will— Verification the effectiveness of inspections carried out under the plan

Verification of the effectiveness of any inspections carried out under the plan is performed through conducting a ground based visual assessment and drone video footage assessment, following the completion of the 36-month (+/- 1 month) Network Asset inspection works.

This will be performed by personnel who have:

- Knowledge of applicable Acts, Regulations and Codes associated with this plan
- Knowledge of this plan and its review and verification obligations
- Knowledge and are familiar with, the Network Assets subject to the review and verification; and
- Charted Professional Engineer (Electrical) status; or
- An independent 3rd Party.

13. Assistance Provided to Fire Control Authorities

Reg	Requirement
6 (1)(o)	the policy of the specified operator in relation to the assistance to be provided to fire control authorities in the investigation of fires near the specified operator's at-risk electric lines.

13.1. Liaison with Management Agencies

Contact with other organisations is vital in both emergency and normal situations throughout both the lead up to, and duration of, the declared fire season. Local government and fire authorities provide valuable information on the expected commencement, duration, and severity of the declared fire season.

AGL Hydro will maintain a representative on the local Shire or Municipal Emergency Management Committees to ensure that fire mitigation strategies are in place and communicated prior to the declaration of fire season.

AGL Hydro shall maintain links with the local government agencies such as the CFA, Parks Victoria, Water NSW and DEECA to ensure swift and effective, response to fire ignition within its area of responsibility including the co-ordination of required resources.

13.2. Investigations of fires

AGL Hydro will allow access to and assist fire control authorities in the investigation of fires at or near the relevant Electric Lines.

14. Public Awareness Programs

AGL Hydro has no private electric supply lines connected to any of its overhead assets.

AGL Hydro 22kV overhead lines passing over 11 private properties between Ausnet Rubicon A substation and AGL Hydro Lower Rubicon Power Station. Refer to Section 16.2.1 of this plan.

AGL Hydro informs, and make aware, the land holders of their obligations about ensuring limits of approach and clearance distances are maintained, allowing access for periodic inspections, and what actions will need to be undertaken if there is a non-compliance.

This will be achieved by informing land holders in writing of AGL Hydro needs for asset access and inspection times, their rights, and the procedure for settlement of any grievances arising.

15. Plan available for inspection

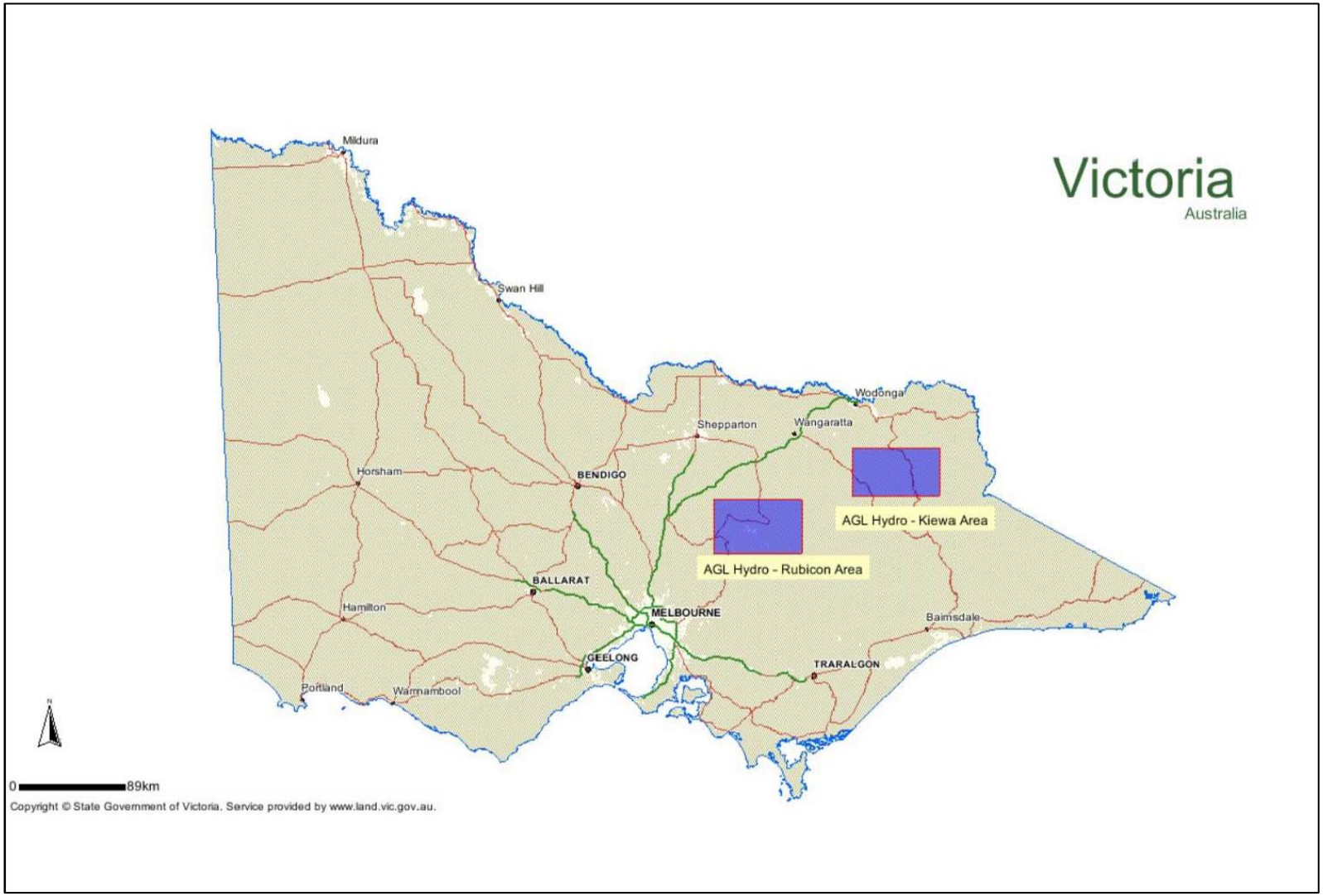
As per Section 83BA (3) (a) of the Act, the latest ESV approved Bushfire Mitigation Plan is available on the AGL Hydro internet site at: https://www.agl.com.au/about-agl/how-we-source-energy/hydroelectric-assets

Any superseded versions of the plan located at the above websites will be overwritten by the AGL Hydro person responsible for preparing the plan once an updated version of the document has been approved/accepted by ESV.

A hardcopy of the ESV approved/accepted Bushfire Mitigation Plan mentioned above is available for inspection at AGL Hydro Mt Beauty Administration office, during normal business hours, located at Kiewa Valley Hwy, Mt Beauty 3699. Any hardcopy superseded versions of the plan will be destroyed by the person responsible for preparing the plan.

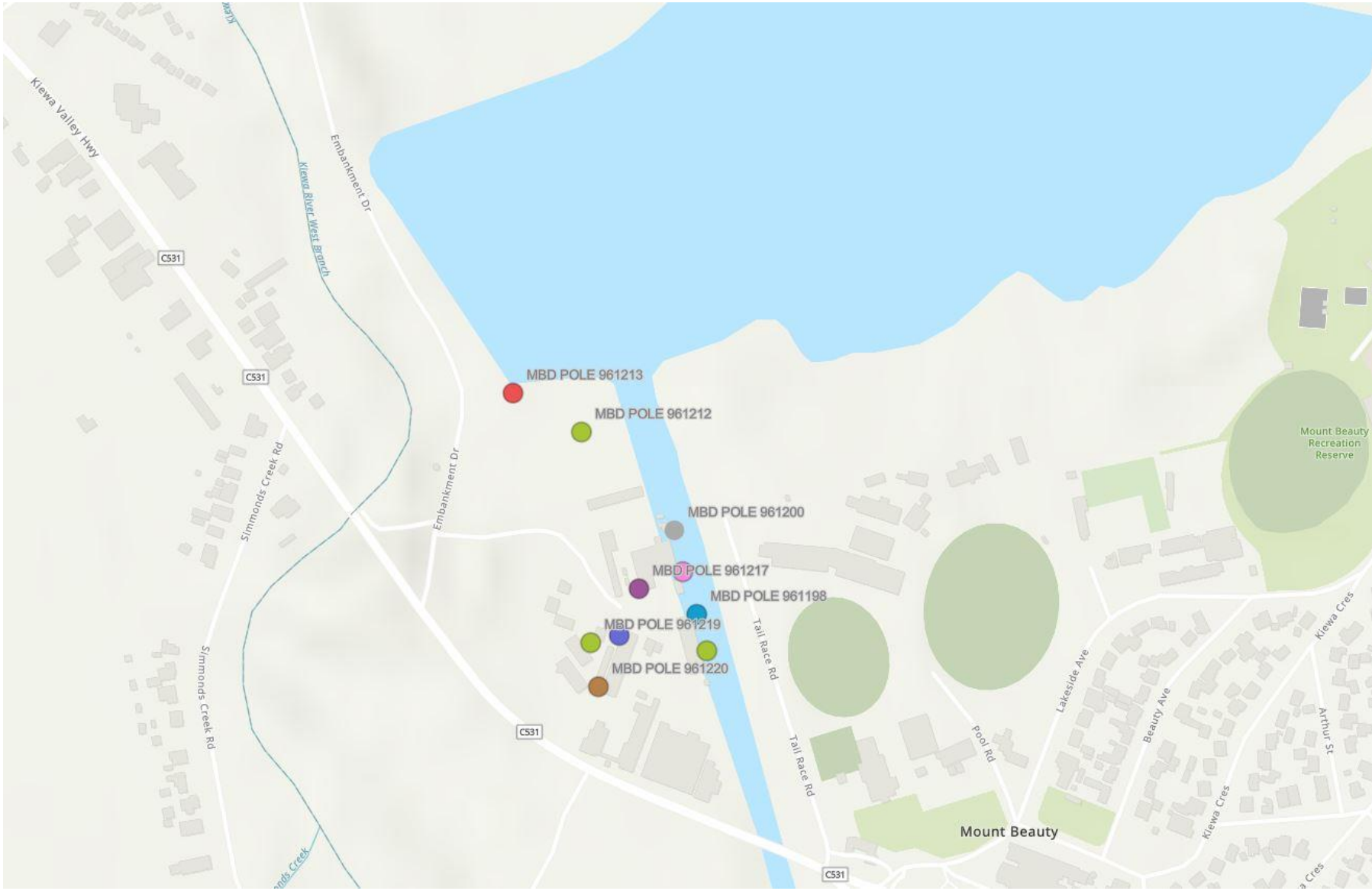
16. Victorian Assets

All overhead electric lines outline in this section are in a Hazardous Bushfire Risk Areas (HBRA). Images in this section are extracts only and illustrates the approximate location of pole assets. For current and detailed specific asset and scheduled maintenance information, please refer to the SAP works management system.



16.1. Kiewa Hydro Scheme Overhead Powerlines

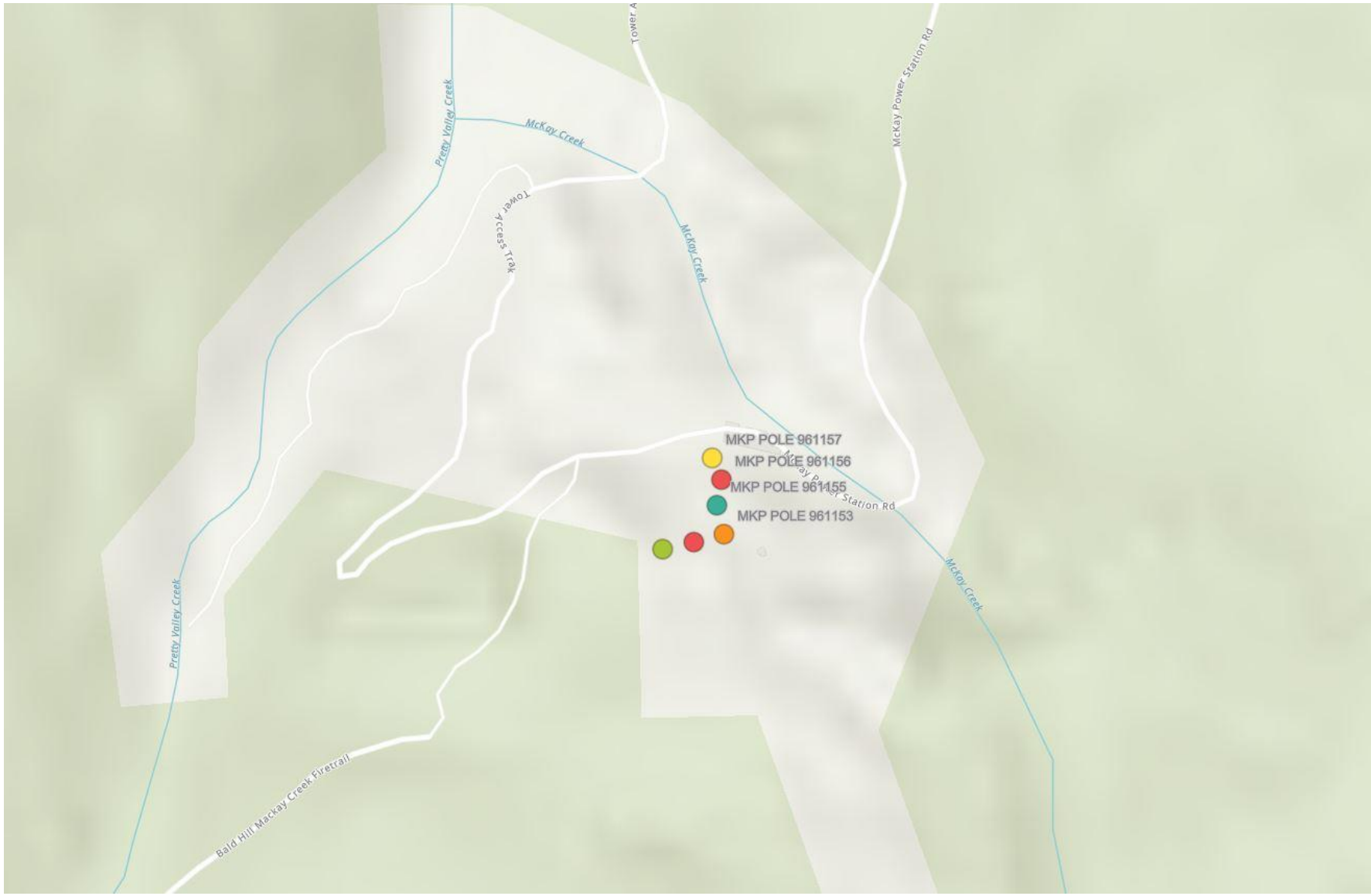
16.1.1. Mount Beauty Depot Pole Location Image



16.1.2. West Kiewa Location Image

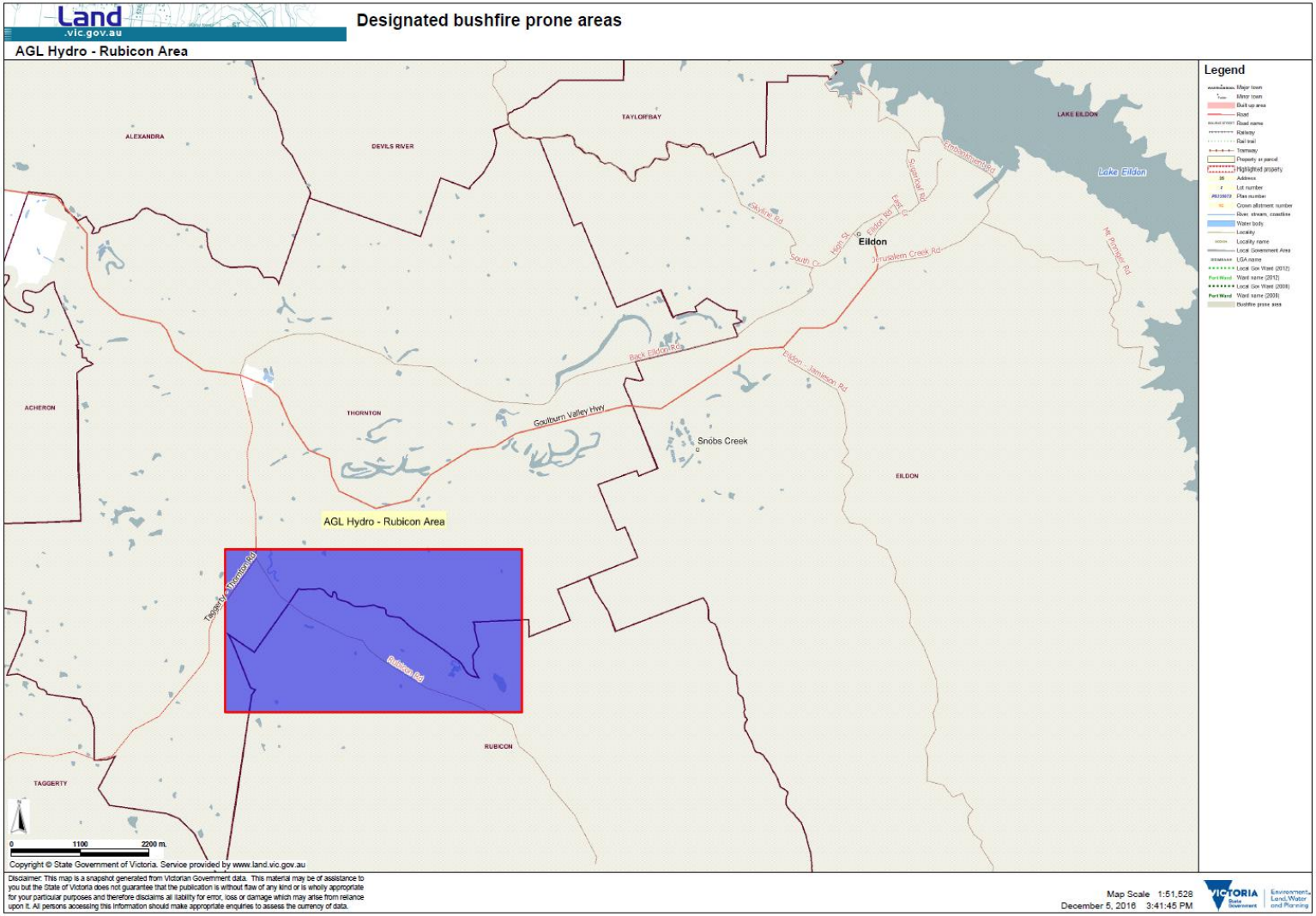
16.1.3. Clover and Bogong Creek Raceline

16.1.4. Kiewa – McKay Crk PS

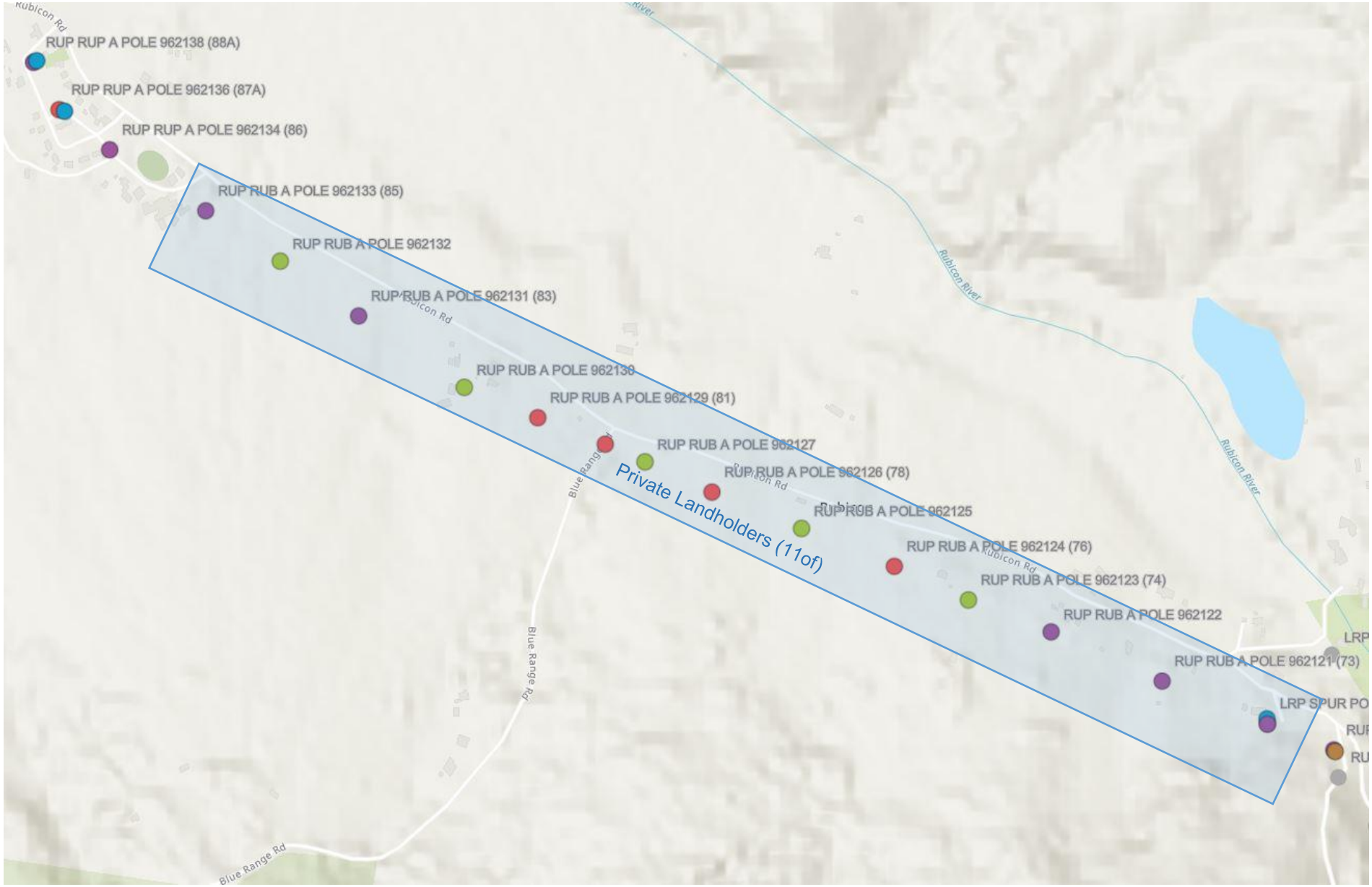


16.2. Rubicon Hydro Scheme Overhead Powerlines

This section relates to all overhead electric lines in the Rubicon Hazardous Bushfire Risk Area (HBRA). Images in this section are extracts only and illustrates the approximate location of pole assets. For current and detailed specific asset and scheduled maintenance information, please refer to the SAP works management system.



16.2.1. Rubicon A - Rubicon PS




LRP SPUR POLE 962118
RUP RUB A POLE 962121 (73)
LRP SPUR POLE 962117 (1)
RUP RUB A POLE 962109 (71)
RUP RUB A POLE 962108 (70)
RUP RUB A POLE 962107 (69)
RUP RUB A POLE 962106 (68)
RUP RUB A POLE 962105 (67)
RUP RUB A POLE 962104 (66)
RUP RUB A POLE 962103 (65)
RUP RUB A POLE 962102
RUP RUB A POLE 962101 (63)
RUP RUB A POLE 962100 (62)
RUP RUB A POLE 962099 (61)
RUP RUB A POLE 962098 (60)
Rubicon River
Rubicon Rd
Herbs Rd

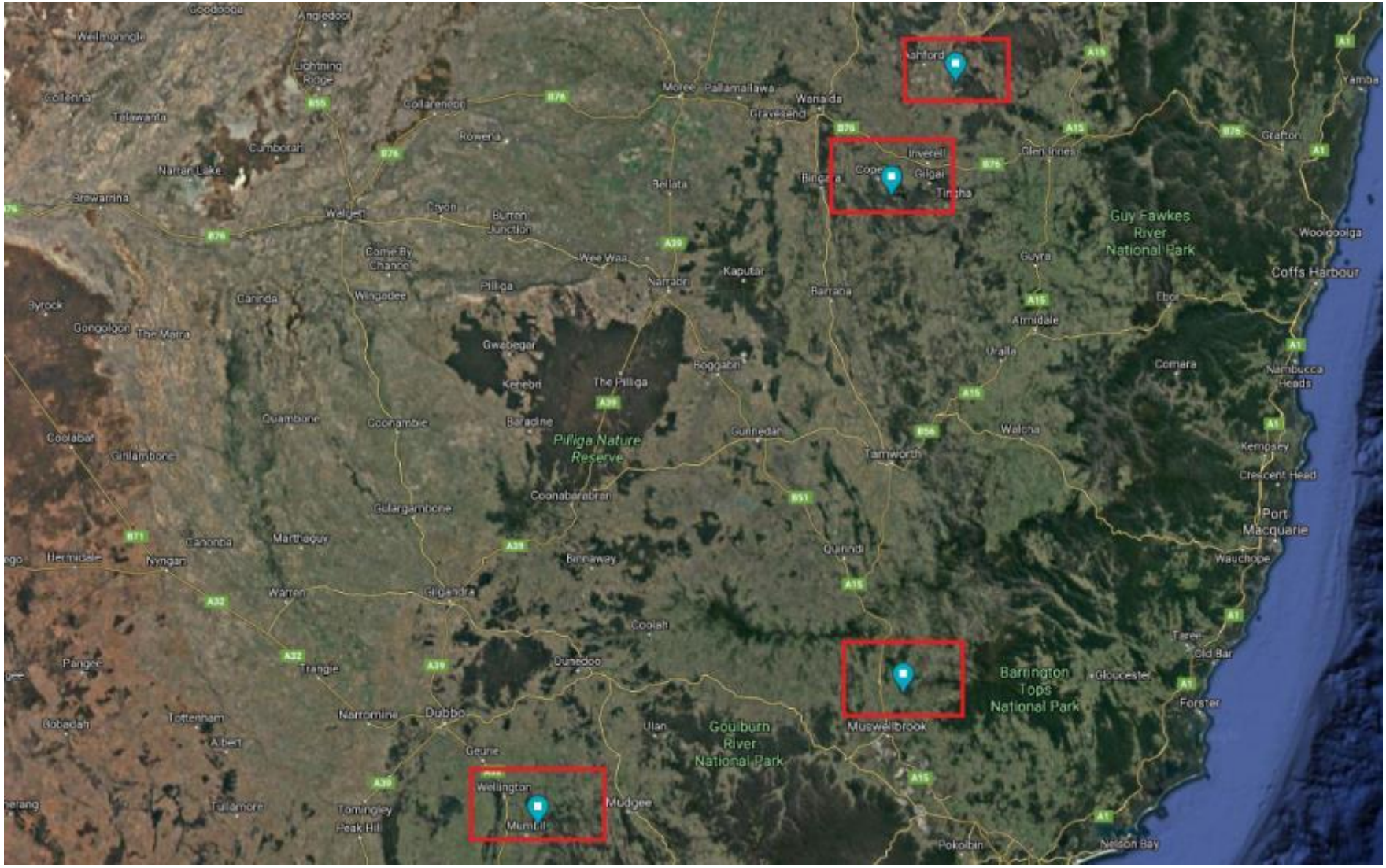

RUP RUB A POLE 962099 (61)
RUP RUB A POLE 962098 (60)
RUP RUB A POLE 962097 (59)
RUP RUB A POLE 962095 (58)
RUP RUB A POLE 962094 (57)
RUP RUB A POLE 962093 (56)
RUP RUB A POLE 962092 (55)
RUP RUB A POLE 962091 (54AG)
RUP RUB A POLE 962088 (53)
MSD POLE 962081 (1)
MSD POLE 962084 (1NSP)
MSD POLE 962085 (S1)
Rubicon Rd
Herbs Rd
Parks Rd
Parks Rd
Parks Rd
Parks Rd
Rubicon River Rd
Herbs Trak
Royston River Rd

16.2.2. Rubicon Falls PS

16.2.3. Royston PS

16.3. NSW Assets

All AGL Hydro NSW overhead electric lines are located with the confines of the power station switchyard of each asset located in the following Hazardous Bushfire Risk Areas (HBRA). Images in this section illustrates the approximate location of pole assets, and for detailed and specific asset information, including locations, please refer to the SAP works management system register.



16.3.1. Pindari Power Station

Address	Pindari Dam Road
Connection Point: Connection clamp to the 66kV incoming line to the AGL Pindari substation. **AGL Hydro Asset Ownership:** AGL Hydro Pindari substation infrastructure including incoming 66kV pole structure and 66kV line connection clamp and dropper cable. **TNSP Asset Ownership:** 66kV incoming overhead line and insulator connected to the AGL Hydro incoming overhead line pole structure.	
NSW Rural Fire Service bushfire prone area assessment: Bushfire Prone Location	

16.3.2. Copeton Power Station

Address	Copeton Dam Road
Connection Point: 66kV incoming line aerial terminations on the AGL Hydro Copeton substation overhead landing span structure. **AGL Hydro Asset Ownership:** AGL Hydro Copeton substation infrastructure including incoming 66kV landing span structure and 66kV line connection clamp and dropper cable. **TNSP Asset Ownership:** 66kV incoming overhead line and insulator connected to the AGL Hydro incoming overhead line landing span structure.	
NSW Rural Fire Service bushfire prone area assessment: Bushfire Prone Location	

16.3.3. Burrendong Power Station

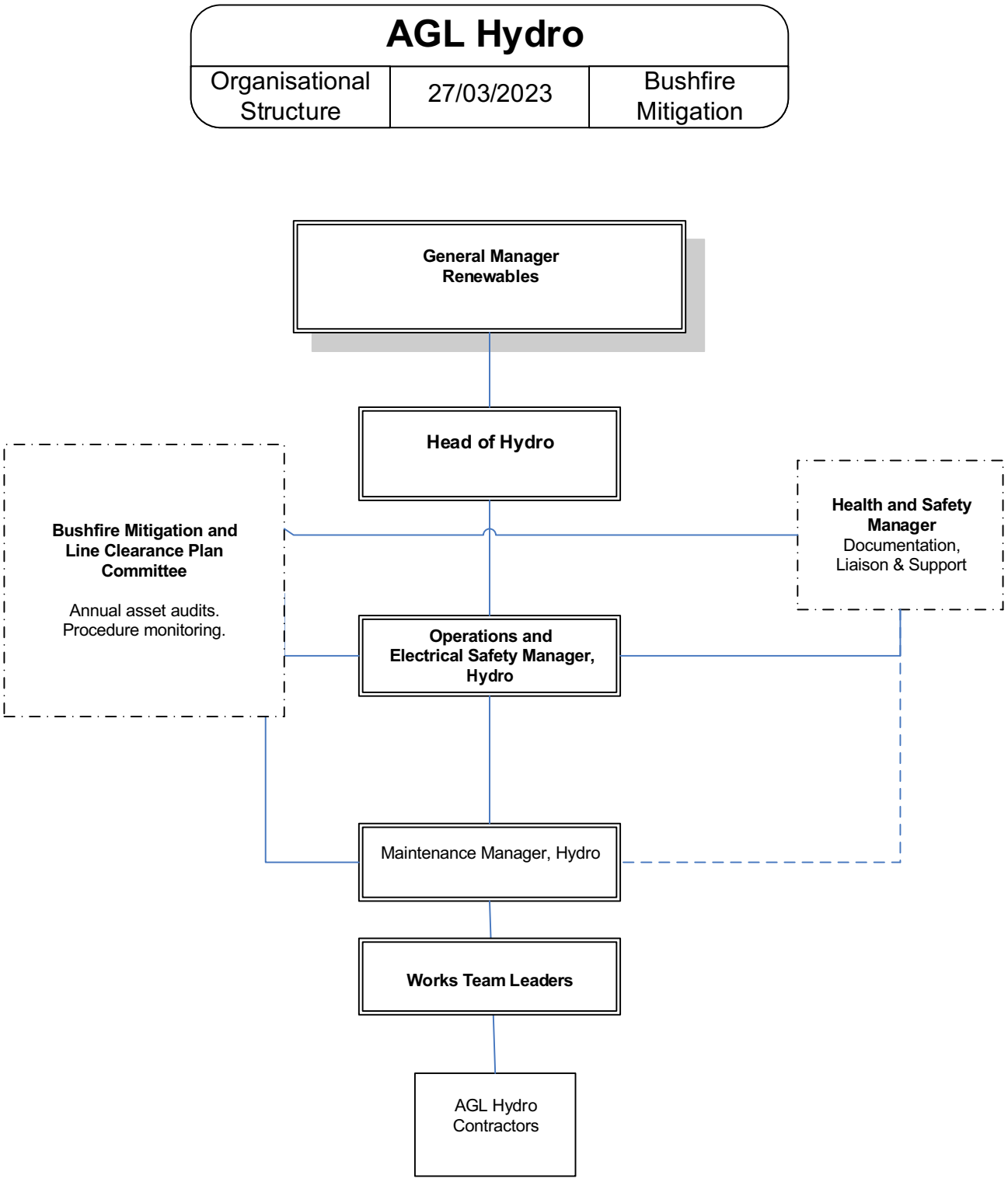
Address	Burrednong Dam Road
Connection Point: 132kV incoming line aerial terminations on the AGL Hydro Burrendong substation overhead landing span structure. **AGL Hydro Asset Ownership:** AGL Hydro Burrendong substation infrastructure including incoming 132kV landing span structure and 132kV line connection clamp and dropper cable. **TNSP Asset Ownership:** 132kV incoming overhead line and insulator connected to the AGL Hydro incoming overhead line landing span structure.	
NSW Rural Fire Service bushfire prone area assessment: Bushfire Prone Location	

16.3.4. Glenbawn Power Station

Address	Glenbawn Dam Road
Connection Point: 33kV incoming line terminations on the AGL Glenbawn rotary air break switch located on the AGL Hydro Glenbawn substation overhead landing span structure. **AGL Hydro Asset Ownership:** AGL Hydro Glenbawn substation infrastructure including incoming 33kV landing span structure. **TNSP Asset Ownership:** 33kV incoming overhead line and insulator (connected to the AGL Hydro incoming overhead line landing span structure) and dropper cable to the AGL Hydro Glenbawn rotary air break switch.	
NSW Rural Fire Service bushfire prone area assessment: Bushfire Prone Location	

17. Appendices

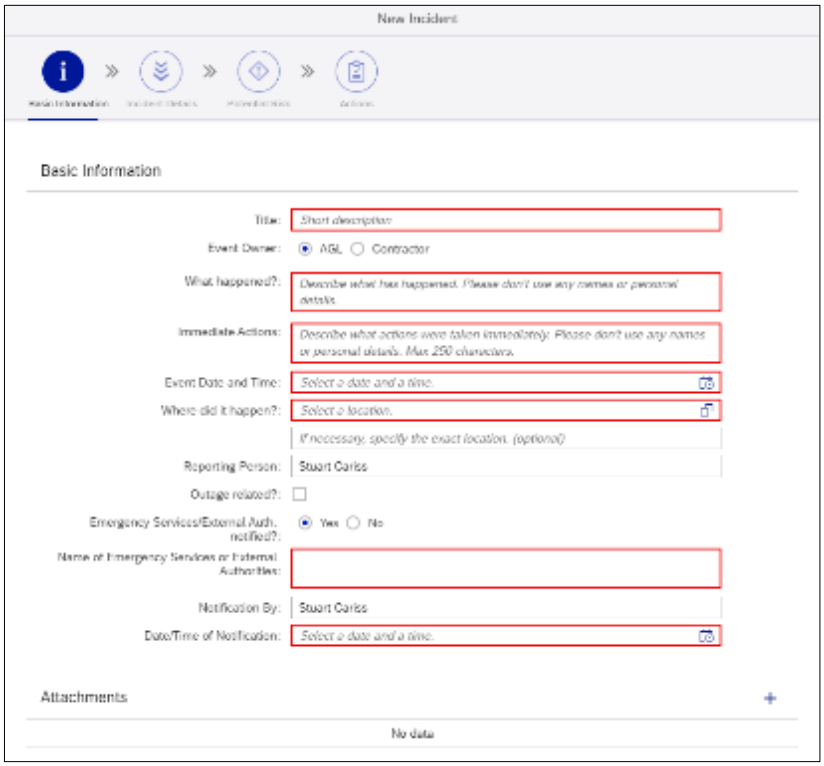
17.1. Reporting Organisational Structure

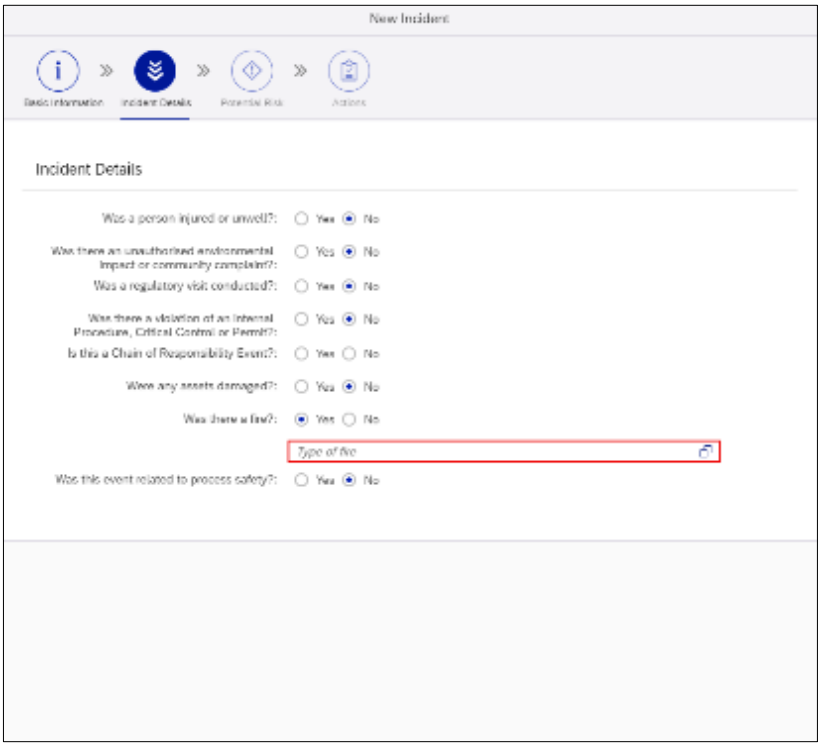


17.2. Incident Reporting

For faults/incidents/defects requiring further internal investigation including fire, the AGL Hydro 'Incident Reporting and Investigation Procedure' is followed. Incidents assessed as being a 'Serious Electrical Event' is considered a notifiable incident and reported separately to ESV and/or WorkSafe Victoria.

All electrical events/faults, that are either the direct cause of a fire ignition or influence risk of fire are recorded and reported using AGL Hydro 'myHSE' management system with an example depicted in the images below.





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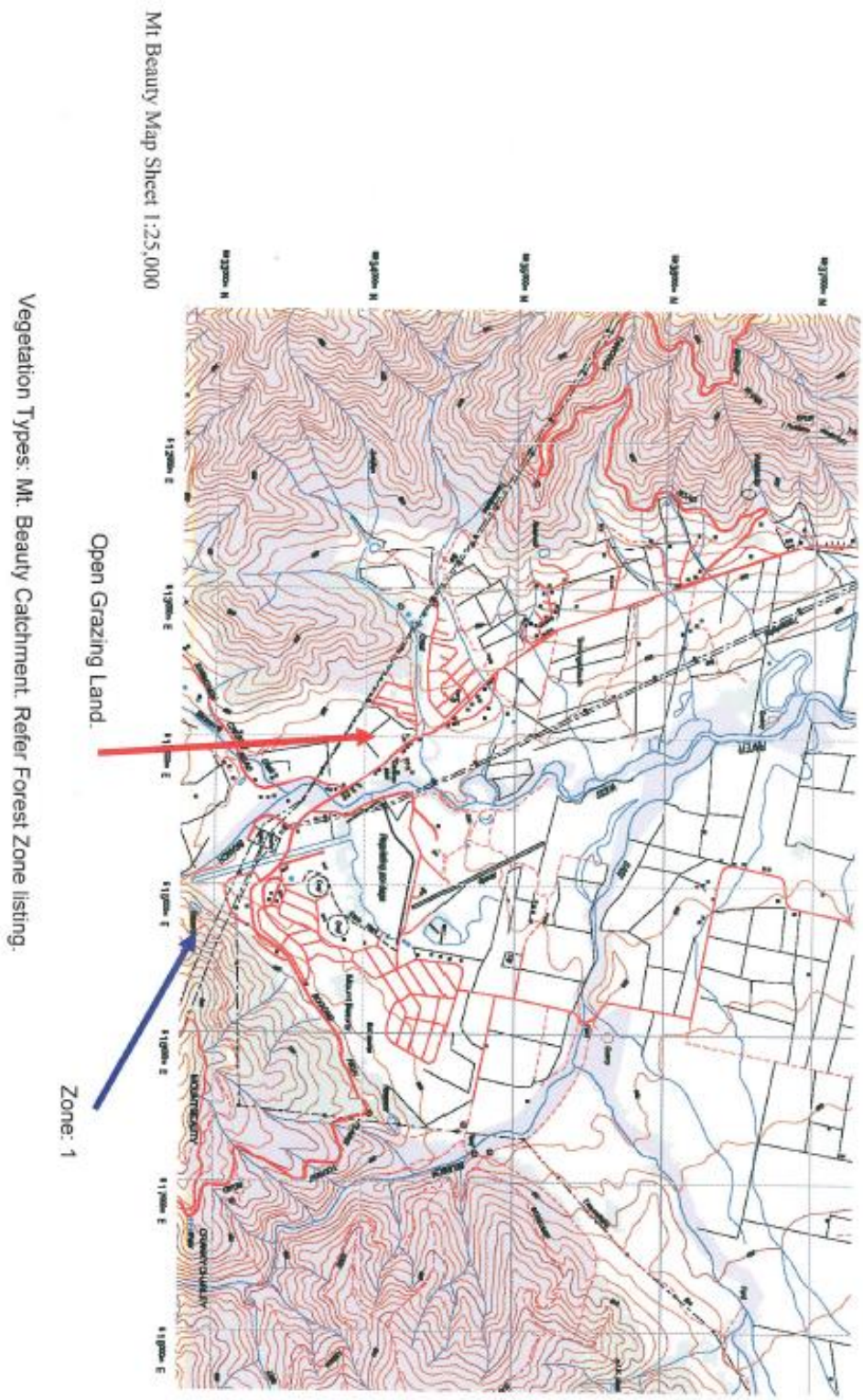
17.3. Engineered Solutions

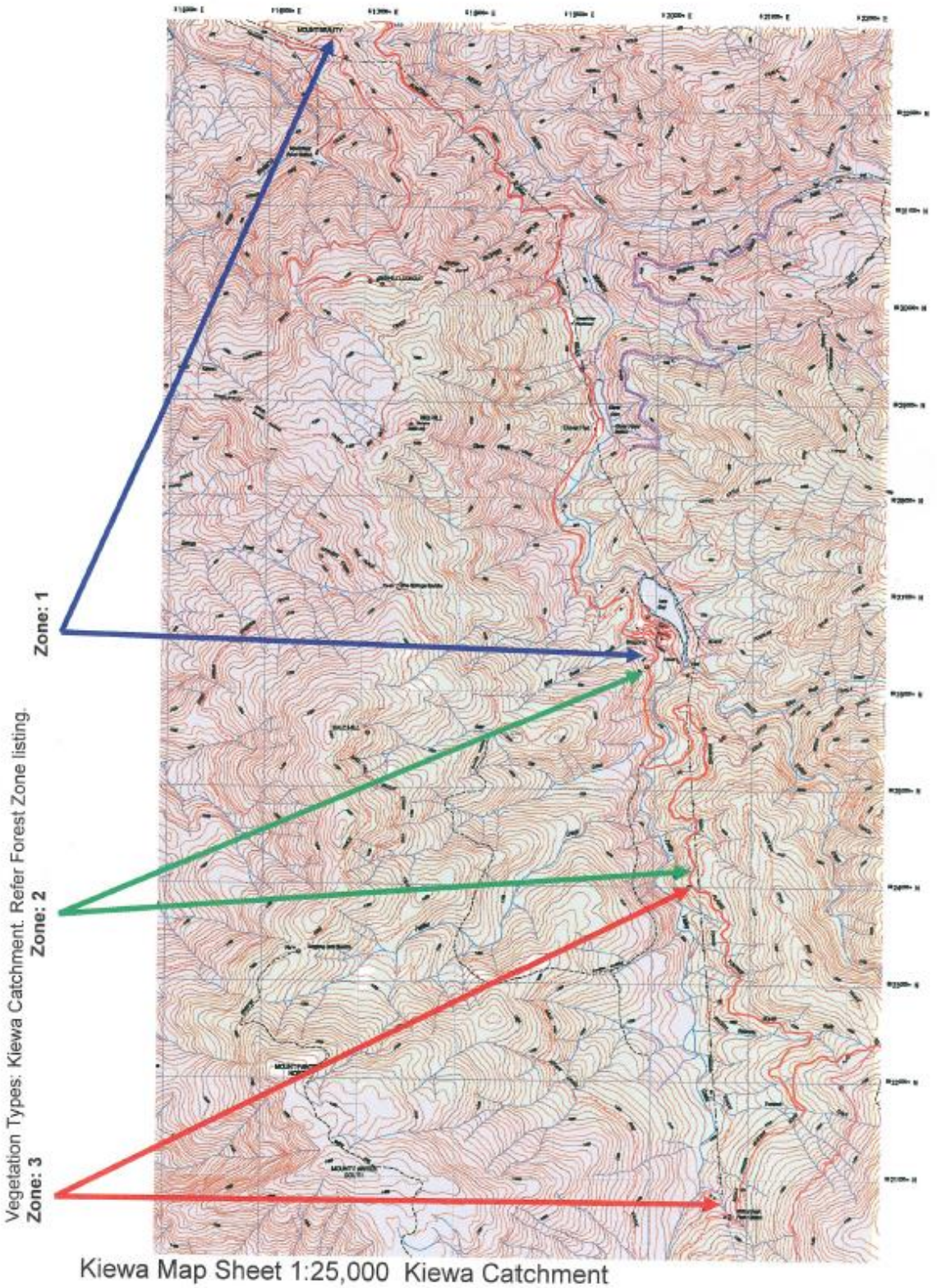
2008	Undergrounding of 5.3 km of overhead 6.6kV line between the Rubicon Haulage and Royston Power station
2014	Undergrounding of the 560m of overhead 240V line between the Royston Power station and the Royston Haulage
2014	Digital modernisation of the 22kV line protection throughout the scheme
2015	Undergrounding of 200m of the upper section of the 6.6kV line to Rubicon falls.
2017	Utilisation of fibre optical connection to site to enable dynamic line protection settings during high fire danger periods & TFB days
2017	Undergrounding of the 1300m 6.6kV line from the Rubicon Haulage to Rubicon Power station
2019	Rubicon A to Rubicon Power Station and Lower Rubicon Station 22kV overhead line REFCL hardening complete and is REFCL compliant
2020	Rubicon Power Station and Lower Rubicon Station 22kV and 6.6kV subnetwork electrical upgrades (REFCL hardening)
2020	Undergrounding the West Kiewa Power Station adit electrical winch LV overhead electrical supply
2021	Undergrounding the Junction Dam telemetry LV overhead electrical supply
2021	Undergrounding the Rubicon Haulage 6.6kV overhead electrical supply
2022 - Current	Rubicon Scheme - High and Low Voltage Network Upgrades

17.4. AGL Hydro Vegetation Types

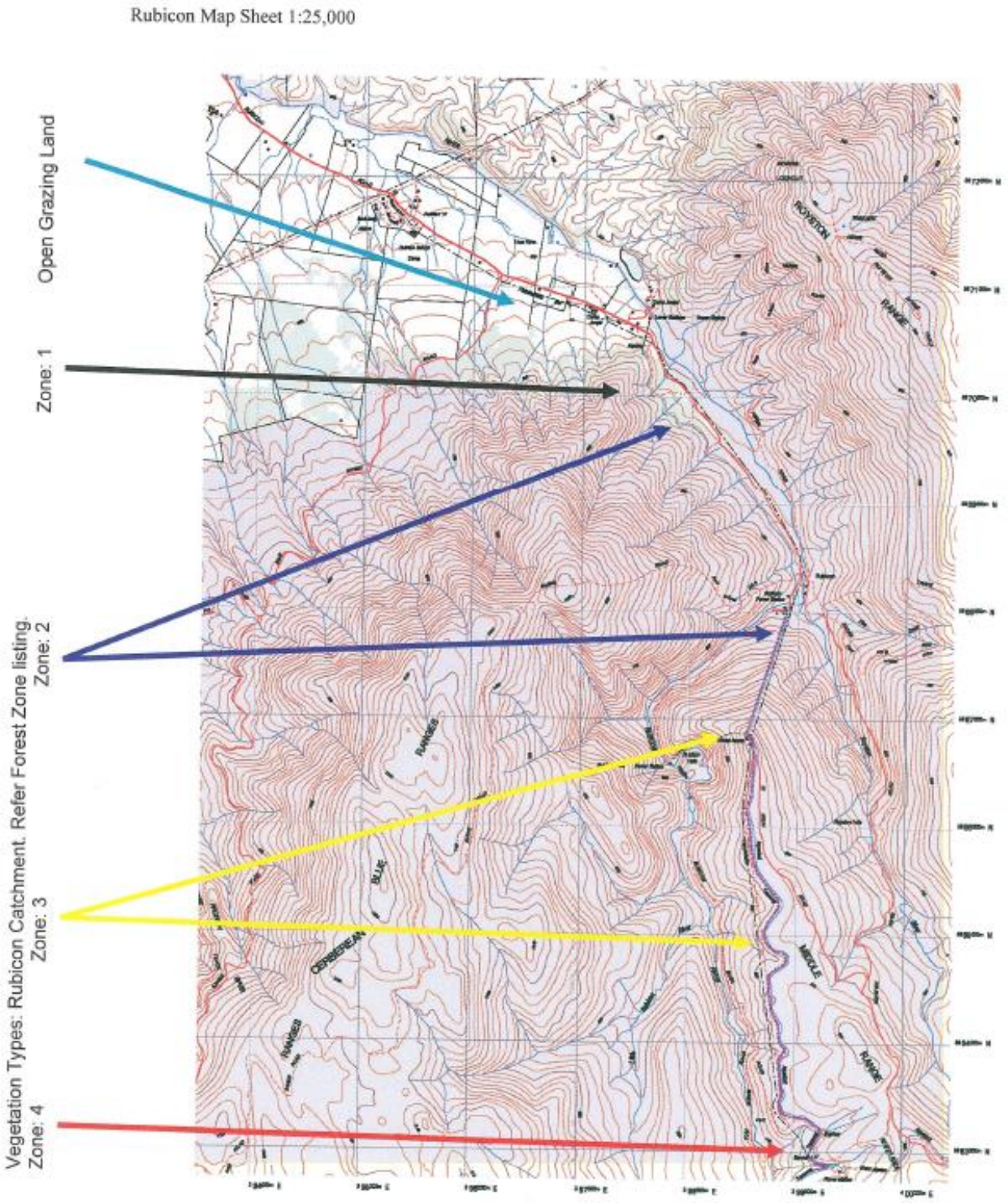
17.4.1. Mt Beauty Depot



17.4.2. Kiewa Scheme



17.4.3. Rubicon Scheme



18. Referenced Documents / Procedures

Document Number	Document Title
AP MO AD 032	Controlled Document Update Procedure
CF MO AD 01	Maintenance Notification - Corrective Action Request
HI AL SF 02	Emergency Management Plan
HP AL AD 01	Consultation, communication, and dispute resolution
HP AL SF 08	Contractors - Selection, Pre-Qualification and Management
HQ AL SF 09	Use of Personal Protective Equipment (PPE)
HP AL SF 11	Excavations Earthworks and Intrusion
HP AL SF 35	HSE Risk Management Procedure
ML AL AD 00	AGL Hydro Asset Management Plan
ML AL FI 00	AGL Hydro Electric Line Clearance Plan
SP AL SF 01	AGL Hydro Electrical Safety Manual (Hydro)
SP SO SF 01	AGL Hydro Electrical Safety Manual (Somerton)
SP YA SF 01	AGL Hydro Electrical Safety Manual (Yarrawonga)
SP AL PE 02	HSE Induction and Authorisation
SP AL RI 01	Electrical Risk Register Procedure
SP AL SA 50	Safe Access Procedures
TP AL HV 01	HV Apparatus Energisation Testing Procedure
AGL-HSE-STD-004.1	AGL HSE Risk Management Standard
AGL-HSE-SDM-004.1	AGL HSE Risk Management Standard Methodologies
AGL-HSE-TMP-004.1	AGL HSE Risk Management Standard Procedure Template
AGL-HSE-GUI-012.1	AGL Obligations to Notify Regulatory Authorities - Guideline
AGL-HSE-PRO-012.1	AGL HSE Incident, Near Miss and Hazard Management Procedure
AGL-HSE-PRO-012.3	AGL HSE Corporate Reporting Procedure
AGL-HSE-STD-012	AGL HSE Incident, Near Miss and Hazard Management Standard