

BUSHFIRE MANAGEMENT PLAN

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Approvals and Reviews

Bushfire Management Plan

Project	CopperString 2.0
Client	CuString Pty Ltd
Document Number	0643-JV-PLN-BMP-0012-B

Revision History

Rev No.	Description of Revision	By	Checked	Approved	Date
A	Developed for ECI Submission	Brad Harbort	Stefan Nightingale	Adrian Terry	31/03/2021
B	Silver Review	Brad Harbort			18/06/2021

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Contents

Approvals and Reviews	2
1. Introduction	4
1.1 Project Scope	4
1.2 Purpose	5
1.3 Background.....	5
1.3.1 Existing Site Conditions.....	5
1.3.2 Climatic Conditions.....	5
1.3.3 Topography	8
2. References	9
2.1 Definitions and Acronyms	9
3. Environmental Assurance	10
3.1 Legislation	10
3.2 UGLCPB JV Procedures And References	10
3.3 UGLCPB JV Management Plans.....	10
4. Responsibilities	10
4.1 Project Manager (Construction Manager)/ Chief Warden.....	10
4.2 Project Leadership & Supervisors/ Deputy Wardens	11
4.3 EA/HSE Advisors/ Site Administrator.....	11
4.4 Workers – Including Contractors.....	11
5. Procedure	11
5.1 5.1 Bushfire Hazard Classification	11
5.2 5.1.1 Risk.....	11
6. Design Phase	12
6.1 Planning.....	12
7. Construction Phase	12
7.1 Inductions And Training	12
7.2 Vehicles	12
7.3 Fire Fighting Facilities.....	13
7.4 Signage	13
7.5 Hot Works Permit.....	13
7.6 Smoking.....	13
7.7 Emergency Response Plan	13
7.8 Weather Watch.....	13
8. Operations	14
8.1 Inductions And Training	14
8.2 Bushfire Information.....	14
8.3 Bushfire Season Preparedness	15
8.4 Communication.....	16
9. Additional Information	16
10. Environmental Considerations	17

1. Introduction

The purpose of the CopperString 2.0 project is to connect the North-West Minerals Province (NWMP) of Queensland to the National Electricity Grid. This will not only allow existing loads in the Mt Isa and Cloncurry areas to be fed from the National Electricity Market NEM, but also provide access to new mining loads and opportunity for connection of renewable generation.

1.1 Project Scope

The CopperString 2.0 Project (the Project) is an extra high voltage transmission system intended to connect the North-West Power System (NWPS) near Cloncurry and Mount Isa to the Powerlink network and National Electricity Market (NEM) at Woodstock. Figure 1 below provides an overview of the Project.

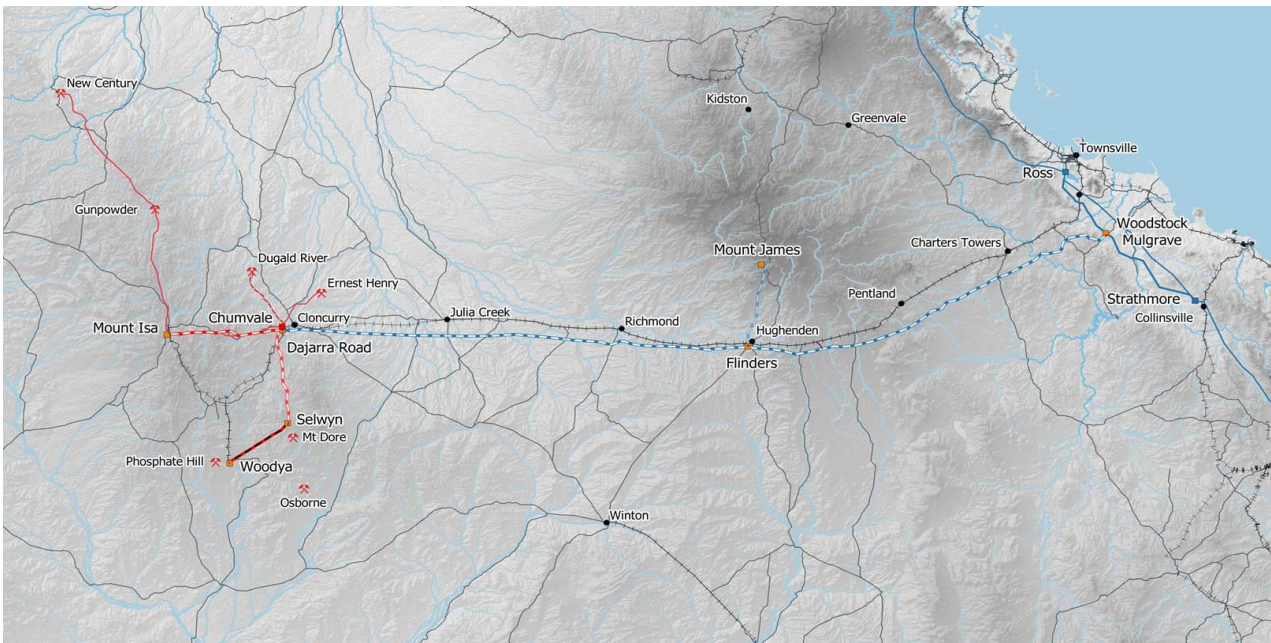


Figure 1: CopperString 2.0 Project - Proposed Transmission Line

CopperString 2.0 will connect into the existing Powerlink 275kV lines at Mulgrave (77 kms south of Townsville) and extend some 1100km to Mt Isa via Hughenden and Cloncurry.

At Woodstock, Powerlink will provide a 275kV switching station (Mulgrave) that will cut into the existing double circuit 275kV lines between Ross and Strathmore. The Mulgrave switching station will be located adjacent to the CopperString 2.0 275/330kV substation (Woodstock).

A double circuit 330kV line (approximately 330km) will then run west to the Hughenden area where a new 330kV switching station (Flinders) will provide reactive power support for the system and a connection point for the Mount James substation approximately 80km North. The Mount James substation services the renewable generation area around Kennedy enabling zone development.

The 330kV double circuit line (approximately 400kms) will then extend to Cloncurry where a new 330/220kV substation (Dajarra Rd) will be constructed. This substation will again provide reactive power support to the system as well as allow connection at 220kV to the following:

- The existing Energy Queensland 220kV system at Cloncurry;
- A new 220kV southern spur to Mount Dore and Woodya; and
- A new 220kV line connecting Mt Isa.

The new 220kV line to Mt Isa (approximately 100kms) will complete the connection to the NWMP where a new 220/132kV substation (Mt Isa) will provide connection to the existing system.

The southern spur will consist of a new 220kV line (approximately 110kms) to a new 220/132kV substation (Selwyn). A further double circuit 132kV will run from Selwyn and connect in to Woodya (50kms). Woodya is a new 132kV switching substation servicing the Phosphate Hill area and other local loads.

Selwyn 220/132kV substation will provide 132kV feeds for loads in the Mt Dore area.

Refer to drawing 3200-0643-DP1-DWG-001 "CopperString 2.0 Overall System Single Line Diagram Initial Arrangement" for further details.

1.2 Purpose

UGL and CPB JV has a legal and moral obligation to manage the environmental compliance requirements associated with the performance of all works. UGL and CPB JV does this using their Environmental Management System (EMS) which is located within the UGL and CPB JV Management System ('UGLMS'). UGL and CPB JV's EMS has been externally certified and maintained in compliance with AS/NZS/ISO 14001:2015.

This Bushfire Management Plan (BMP) provides a high-level structure on how the CopperString 2.0 project will manage its Bushfire management obligations and responsibilities across all work activities. It is structured so that it can be used as a system implementation tool to ensure compliance with the UGL and CPB JV Environmental Management System. This plan:

1. Explains the content, structure and relationship with other systems used by the project
2. Establishes how the project will maintain environmental compliance with legislation
3. Outlines the project risk profile, core function and work activities
4. Sets performance objectives and targets
5. Promotes the implementation of the One HSE Culture Framework.

This BMP aims to meet the needs of the CopperString 2.0 project and our client, to ensure legal compliance, provide for continuous improvement and minimize adverse impacts on the environment. The effective implementation of this BMP is the responsibility of all project personnel and subcontractors, however the UGL and CPB JV Project Manager has ultimate accountability for ensuring that compliance occurs.

This Plan should be read in conjunction with the Project CEMP and the H&S Plan.

1.3 Background

1.3.1 Existing Site Conditions

Due to the vast size of the project, in excess of 1100km and the lengthy timeframe of 3 -4 years of expected construction, site conditions are markedly variable dependent on bio regions and time of the year. Based off historical data, conditions which could be met range from flooding rains arising from ex tropical cyclones, extended heat waves and prolonged dry periods including drought and harsh winds with potential to fuel bushfires and severe storms with regular lightning strikes.

1.3.2 Climatic Conditions

The Bureau of Meteorology provides accurate local climatic data. The below figures summarise the main climatic conditions across the numerous bioregions and key settlements within close vicinity to the project corridor.

The prevailing winds within the project corridor are generally south-east to north-east although there are vast differences between coastal and inland locations. Below are wind summaries for Townsville on the coastal edge of the project and Cloncurry which is one of the main inland centres within the project area.

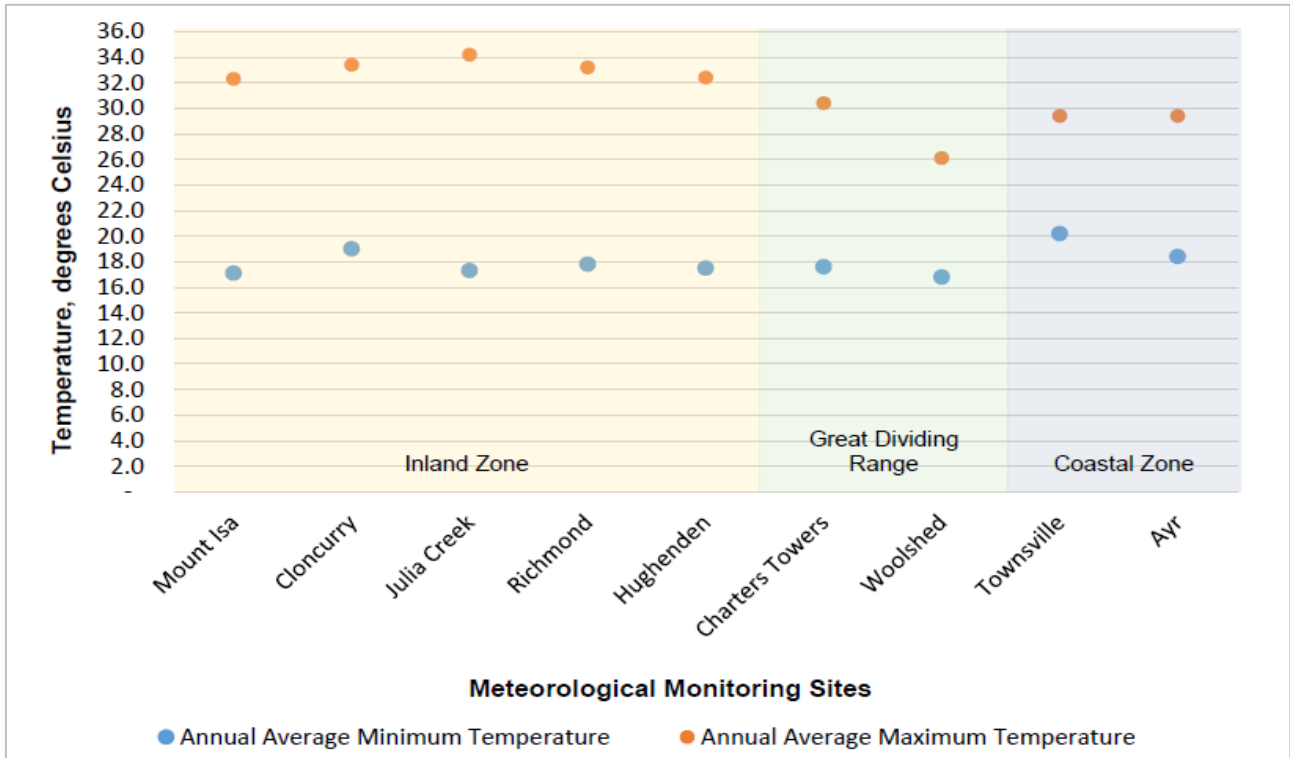


Figure 2: Annual Average Temperature Statistics

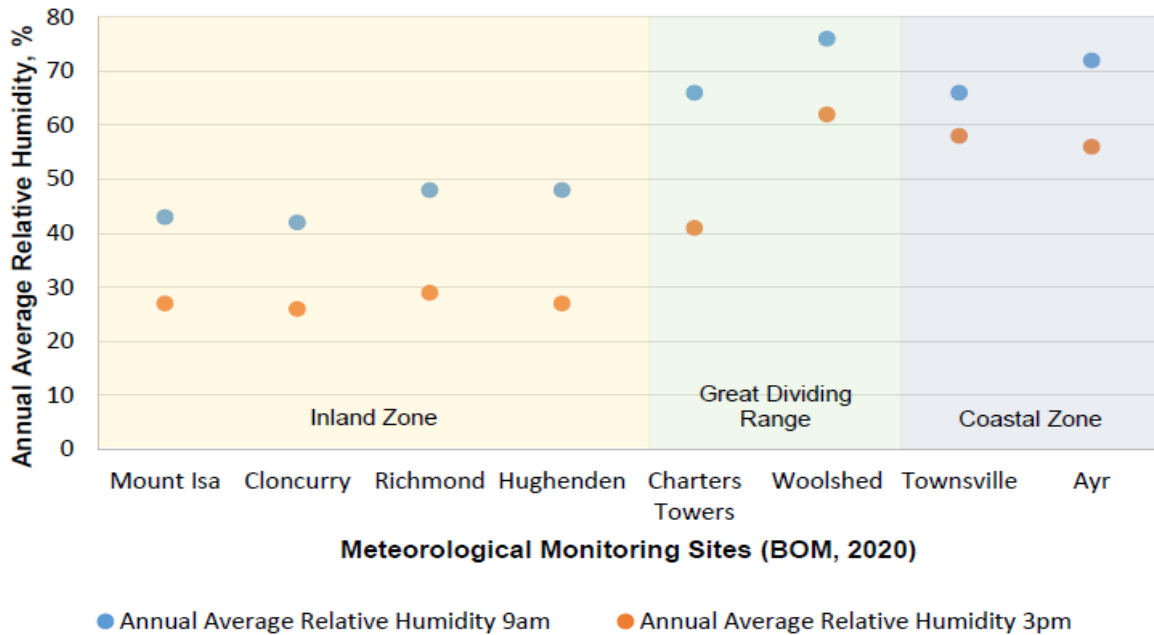


Figure 3: Annual Average Relative Humidity Statistics

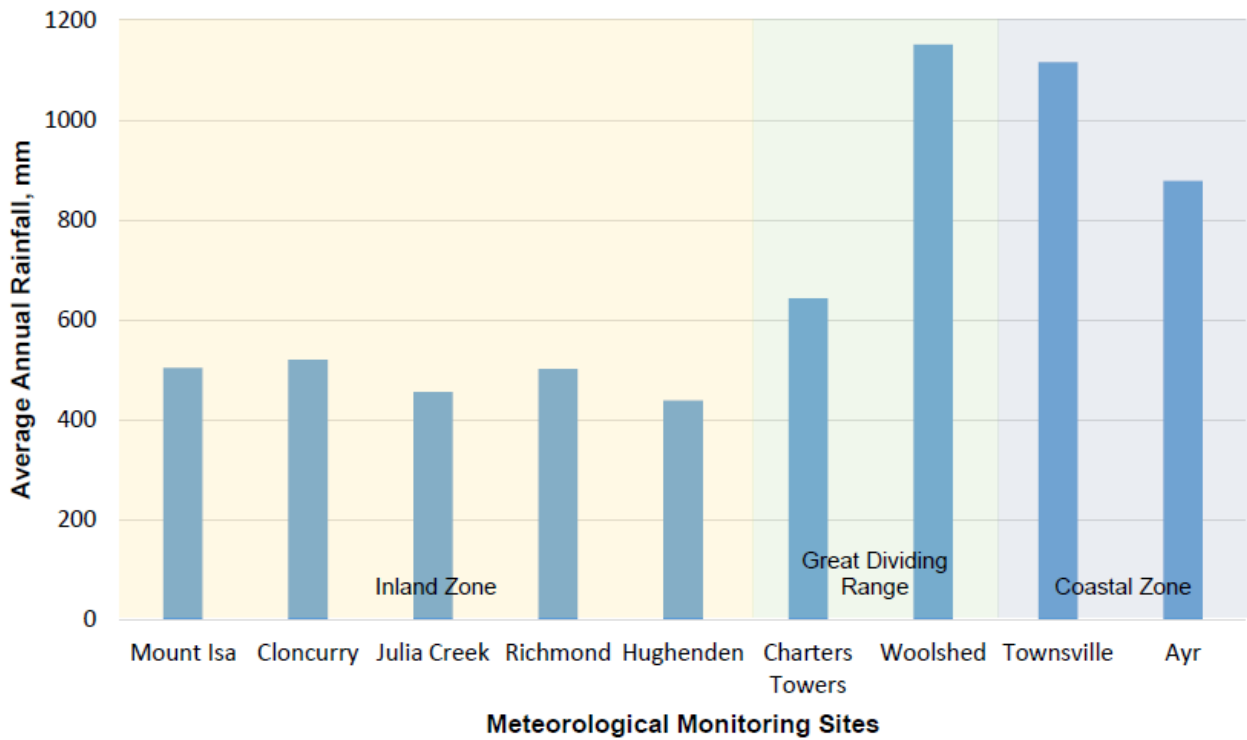


Figure 4: Annual Average Rainfall Statistics

The prevailing winds within the project corridor are generally south-east to north-east although there are vast differences between coastal and inland locations. Below are wind summaries for Townsville on the coastal edge of the project and Cloncurry which is one of the main inland centres within the project area.

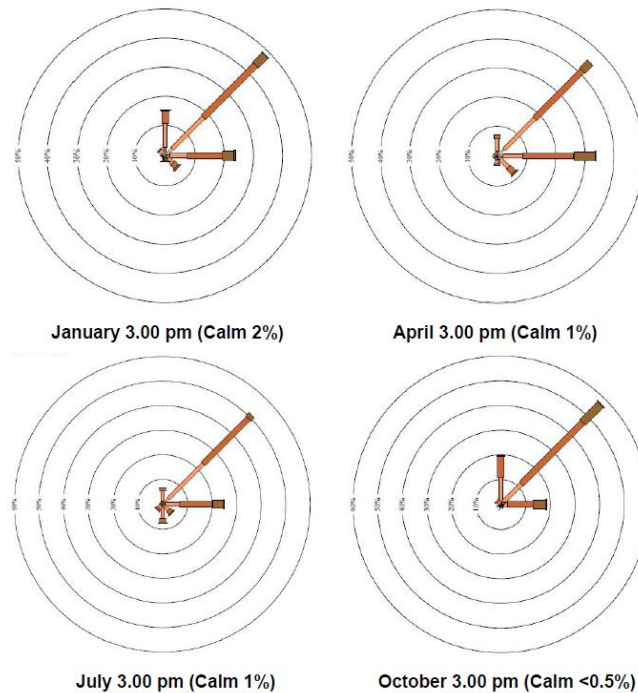


Figure 5: Average Seasonal Wind Speed vs Direction at Townsville

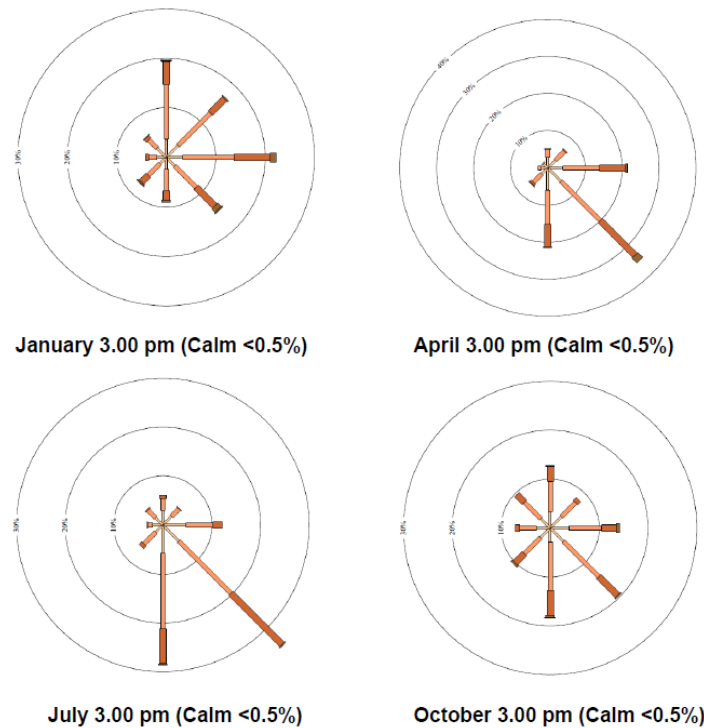


Figure 6: Average Seasonal Wind Speed vs Direction at Cloncurry

1.3.3 Topography

The CopperString 2.0 project spans across six bioregions with each one capturing a unique largescale geophysical pattern. The Bioregions located across the project and some main characteristics of each zone are summarised below:

- **Brigalow Belt:** The Brigalow Belt/Einasleigh Uplands portion of the project is characterised by portions of rugged ranges and sections of alluvial plains ranging from approximately 80 m Australian Height Datum (AHD) up to 420 m AHD.
- **Einasleigh Uplands:** characteristics are similar to the Brigalow Belt portion of the project and summarised above.
- **Desert Uplands:** The Desert Uplands section covers approximately 200km of the project and consists of upland landforms, sandstone ranges and sandstone plains. Included in the Desert Uplands zone are some large river systems including Balfe Creek and Torrens creek and also crosses the Great Dividing Range.
- **Mitchell Grass Downs:** The Mitchell Grass Downs bioregion is located to the south of the Flinders Highway and covers a larger portion of the corridor than any other region. This bioregion contains large grass covered plains with a sparse spread of trees, sporadic ridges, gorges and includes numerous creek and river systems, some of which are a part of the flinders river catchment. This section generally sits around 140 m AHD.
- **Gulf Plains:** The Gulf Plains bioregion compromises of flat to gentle undulating alluvial clay deposits and sporadic deep depressions capable of holding water for short periods of time. The primary feature of the Gulf Plains is the network of channels which form a part of the flinders river catchment.
- **Northwest Highlands:** The western corridor of the project and southern spur lines comprise of the Northwest Highland bioregion which consists of undulating ground with steep ridges, plateaux's, narrow river valleys and alluvial clay plains. The southern section of this bioregion includes the Selwyn ranges before opening into areas of flatter sections leading into the Mitchell Grass Downs bioregion. Elevations in the Northwest bioregion are as high as 570 m ADH.

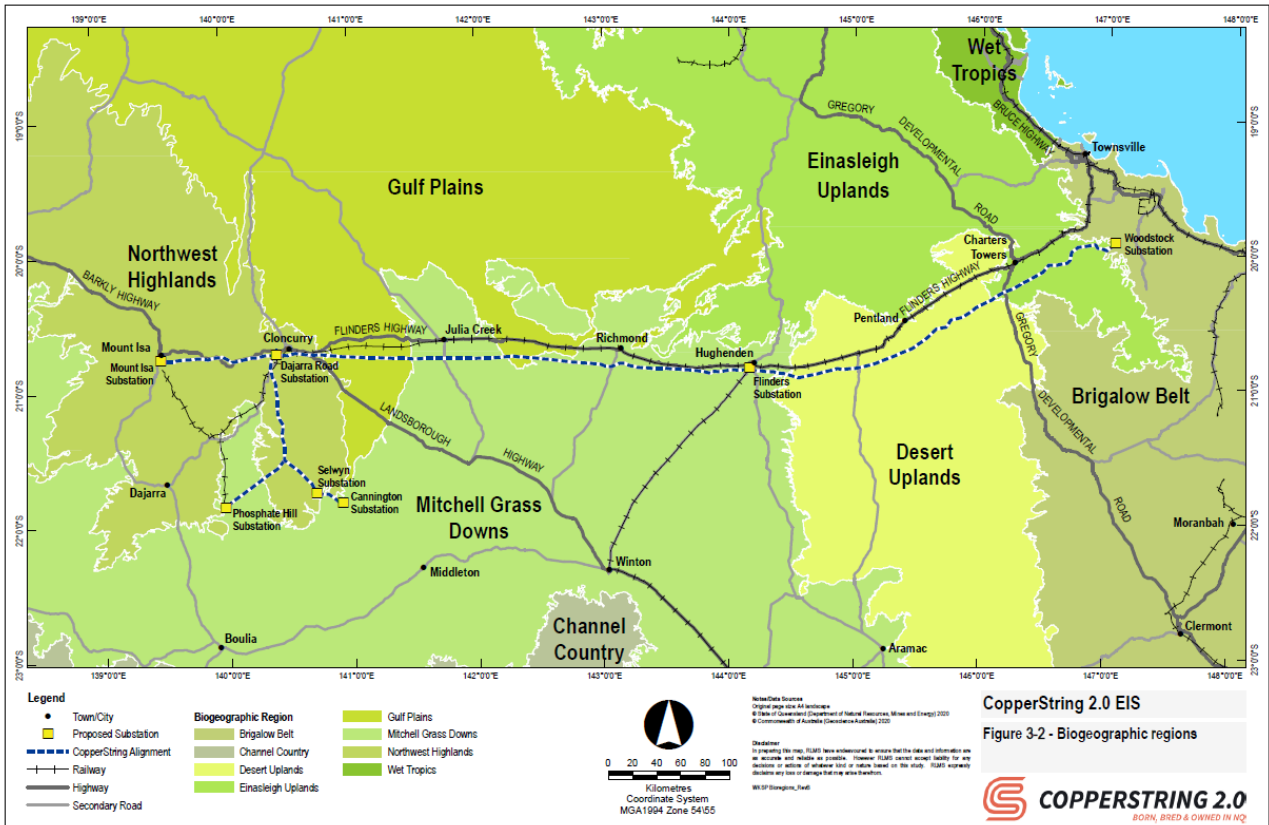


Figure 7: Description of Bioregions located across the project

2. References

2.1 Definitions and Acronyms

Acronym	Definition
AS	Australian Standard
AW	Area Warden (TBC for each area)
BMP	Bushfire Management Plan
BOM	Bureau of Meteorology
CEMP	Construction Environmental Management Plan
CW	Chief Warden (Construction Manager)
EA	Environmental Advisor
EC	Evacuation Coordinator (Site Admin) (where required)
ECO	Emergency Control Organization. Consists of the Chief warden, Area Wardens, wardens, security personnel and all first aiders.
Emergency	An event that places personnel, plant, equipment, property and/or environment in an abnormal, dangerous and/or uncontrolled state.
EMS	Environmental Management System

ERP	Emergency Management Plan
HSE	Health, Safety and Environment
NEM	National Environmental Manager
NZS	New Zealand Standard
SES	State Emergency Services
TBC	To Be Advised
TMP	Traffic Management Plan
UGL AND CPB JV	UGL Engineering and CPB Contractors Joint Venture
UGL AND CPB JV MS	UGL AND CPB JV Management System
AHD	Australian Height Datum

Table 1 – Definitions and Acronyms

3. Environmental Assurance

3.1 Legislation

All legislation is contained within the CopperString 2.0 Construction Environmental Management Plan.

3.2 UGLCPB JV Procedures And References

All procedures and references are contained within the CopperString 2.0 Construction Environmental Management Plan.

3.3 UGLCPB JV Management Plans

A copy of the following plans are to be read in conjunction with the plan.

Document Number	Document Title
0643-JV-PLN-CEM-0002 H&S Implementation Management Plan	H&S Implementation Management Plan
0643-JV-PLN-CEM-0003 CEMP	Construction Environment Management Plan
0643-JV-PLN-TMP-0005	UGL and CPB JV Traffic Management Plan

4. Responsibilities

National Environmental Manager

This person shall:

- The National Environmental Manager (NEM) overall responsibility is to manage the implementation and input into the continuous improvement of the environmental management system.

4.1 Project Manager (Construction Manager)/ Chief Warden

This person shall:

- Provide resources to all locations on site (easements, laydowns, access tracks, camps & offices) to meet its objectives
- Authorise the cessation of the activities and site evacuation, based upon information and consultation with stakeholders
- Identify locations and allocate responsibility to Site Supervisors.

4.2 Project Leadership & Supervisors/ Deputy Wardens

Bushfire wardens shall:

- Assist the Site Superintendent and Site Supervisors or their delegates in accounting for personnel on site
- Provide communication conduit between management team and employees.

4.3 EA/HSE Advisors/ Site Administrator

This person shall:

- Ensure the daily monitoring of the local and state fire and emergency service websites for information on bushfire bulletins
- Provide daily sign on sheets with site personnel locations.

4.4 Workers – Including Contractors

All personnel shall:

- Comply with directives
- Maintain contact with company representatives to confirm return date to site if on R/R
- Identify and report any issues to assist with the management of the bushfire
- Remain fit to return to work and assist in the case of emergency.

5. Procedure

5.1 5.1 Bushfire Hazard Classification

The site covers land which is classified as Rural across all local government regions.

5.2 5.1.1 Risk

Critical risks associated with the CopperString 2.0 project are:

- Working with Electricity
- Cranes and Lifting
- Plant and Equipment
- Breaking Ground (Excavation and Trenching)
- Traffic Management
- Hazardous Chemicals.

Further key risks associated with the CopperString 2.0 project are:

- Driver and Vehicle Safety
- Hot Works
- Hazardous Manual Tasks and Ergonomics
- Fitness for Work and Fatigue Management

- Biological Hazards
- Travel Safety
- Safe Use of Hand Tools
- Heavy Vehicle Management.

Key aspects which will minimise the risk of fire, and ensure the project does not expose people and works to unacceptable risks from bushfire, include:

- Knowledge of road network throughout the sites and all relevant working areas
- Accessible sources of water
- Appropriate firefighting facilities
- Personnel on site who understand how to respond quickly to a fire and use the equipment available on site
- Understanding of local Fire Fighting Authorities capabilities and resources.

A detailed description of the bushfire management plan for each stage of the project, i.e. design, construction and operations, is provided in the following sub-sections.

6. Design Phase

6.1 Planning

During the design phase, respective management plans including actions to reduce the risk of bushfires on the project have been developed. Emergency contact details for areas along the project and key emergency contacts have also been identified. Project planning also aims to identify bushfire prone areas and stage works not to coincide with high risk bushfire periods.

7. Construction Phase

UGL and CPB JV has put in place the following measures in conjunction with the H&S plan and TMP.

7.1 Inductions And Training

All personnel and visitors onto the site will be required to attend an induction when they first arrive on site. Part of this induction will include aspects of the Bushfire Management Plan. The Local Fire Authority (District) will be invited to attend regular Toolbox talks during the dry season with follow up “refresher” presentations conducted throughout the construction of the Project.

Representatives from each major contractor will be shown how to use the firefighting equipment on the back of project vehicles. Inductions will also address the smoking policy on site, emergency phone numbers, aspects of the Project Emergency Response Plan and the muster area.

7.2 Vehicles

Diesel powered vehicles shall be used on site and petrol driven vehicles shall only be used if fitted with spark arrestors. Vehicles shall be driven on formed roads and surfaces wherever possible to avoid the collection of debris under the vehicle that may cause a fire to start. All project vehicles will contain a fire extinguisher and UHF radios.

7.3 Fire Fighting Facilities

All buildings will be fitted with smoke detectors and contain portable fire extinguishers. All fire extinguishers and smoke detectors shall be certified as per Australian standards and will be inspected on a 6-monthly basis by competent personnel. If the civil works contractor is working on site at the time of the fire, the use of graders, water trucks, front end loaders and bobcats may be possible.

7.4 Signage

Signage at the temporary construction office compound will state the emergency numbers for the Owner's Operations Manager, Contractor's Service Manager, District Fire Warden, emergency contacts and the radio channel to contact the Fire Brigade. UHF radios are in the temporary Construction Office and in project vehicles.

7.5 Hot Works Permit

No waste materials shall be burnt on site. All rubbish shall be disposed of in the appropriate manner. Where it may be necessary to undertake "hot works" e.g. welding, cutting, a "hot work permit" shall be issued and followed in accordance with the UGL and CPB JV Hot Work procedure. This will set procedures to be followed regarding where the work is undertaken, firefighting equipment and personnel to be in attendance and the timing for the work to be well defined. No naked flames will be permitted on site.

7.6 Smoking

Smoking on site will be restricted to designated smoking areas and cigarettes are to be extinguished in ashtrays only. Cigarettes are not to be thrown on the ground or from vehicles.

7.7 Emergency Response Plan

An Emergency Response Plan has been prepared for the Construction Phase. This Plan will detail the procedures to be followed in the event of a fire and will form a part of the H&S Plan.

In the event of a fire, all resources and expertise available on site are to be made available to the relevant Fire & Rescue Services. Personnel on site will comply with directions given by the relevant Fire & Rescue Services.

Personnel are only expected to fight small fires within their level of competence. The relevant Fire & Rescue Services will be called immediately if the fire cannot be controlled.

UGL and CPB JV Management will utilise a site siren which will be located at the main administration area to inform all site personnel of a bushfire threat in the immediate vicinity. UGL and CPB JV employees will be advised of their evacuation status and an employee list will be confirmed prior to the bushfire threat.

Essential Personnel – Project Management team and personnel required for post bushfire inspection and clean-up activities.

The UGL and CPB JV Site Management or his/her delegate will be responsible for the health and safety of all personnel and for the completion of all risk assessments after any event.

7.8 Weather Watch

All up to date bushfire information will be communicated through UGL and CPB JV daily pre starts. The construction Supervisors will advise all employees daily at the pre-start meeting the expected weather conditions provided by the Bureau of Meteorology (BoM) and the relevant Fire and Emergency Services (FES) website. This data will be posted on the Notice Boards in Office Buildings and Crib Huts.

Weather reports from the BoM will be monitored on a regular basis by UGL and CPB JV management. Prior to bushfire alert being issued there is often a bushfire watch in place via local emergency services. (refer local contact list) Throughout the duration of the Project all work fronts and relevant areas shall be maintained to a bushfire readiness standard. During Bushfire watch and bushfire alert phases, all personnel shall be kept abreast of information regarding the pending bushfire via noticeboards, alerts, bulletins, meetings and via radio or telephone means.

Always drive to the current road conditions and obey Road laws. Under no circumstances is anyone permitted to drive a vehicle to or from site without the permission of the Project Management, or delegate, during a bushfire alert. Permission shall be granted only after confirmation of the roads being declared accessible and the All Clear given.

No vehicle is to leave site and the respective working areas such as easements, camps, offices or proceed to site, during a potential bushfire warning, as per the Project Traffic Management Plan.

Alternative escape routes must be identified where weather watch indicates that roads in the area may be cut.

8. Operations

8.1 Inductions And Training

All personnel and visitors arriving on site will be required to attend an induction when they first arrive. Part of this induction will include aspects of the Fire Management Plan. The District Fire Warden will be invited to attend regular Toolbox talks during the dry season with follow up “refresher” presentations conducted throughout the construction of the Project.

Final design is still to be completed and an operational plan will be developed further when final design is completed.

8.2 Bushfire Information

Queensland Fire and Emergency Services	
Website	https://www.ruralfire.qld.gov.au/Pages/Home.aspx https://www.qfes.qld.gov.au/Pages/default.aspx
Townsville Fire and Rescue Station	07 4796 7480
Mt Isa Fire Station	07 4744 5281
Julia Creek Fire Station	07 4746 7518
Hughenden Fire Station	07 4741 1573

Emergency Services Contact Details	
Service	Contact Number
Ambulance	000 or 112 from mobiles
Fire	000 or 112 from mobiles
Police	000 or 112 from mobiles
Townsville Police	07 4759 9777
State Emergency Service (SES)	132 500
Townsville Hospital	07 4433 1111
Charters Towers Hospital	07 4787 0333
Hughenden Hospital	01 4741 2800
Richmond Hospital	07 4741 6100
Julia Creek Hospital	07 4741 6400
Cloncurry Hospital	07 4742 4500
Mt Isa Hospital	07 4744 4444

Healthlink Family Medical Centre - Townsville	07 4773 3933
Royal Flying Doctors Service	1300 My RFDS (1300 69 7337)
Wildlife Rescue Australia 24 Hour Call Centre	1300 596 457

CuString – Emergency Services

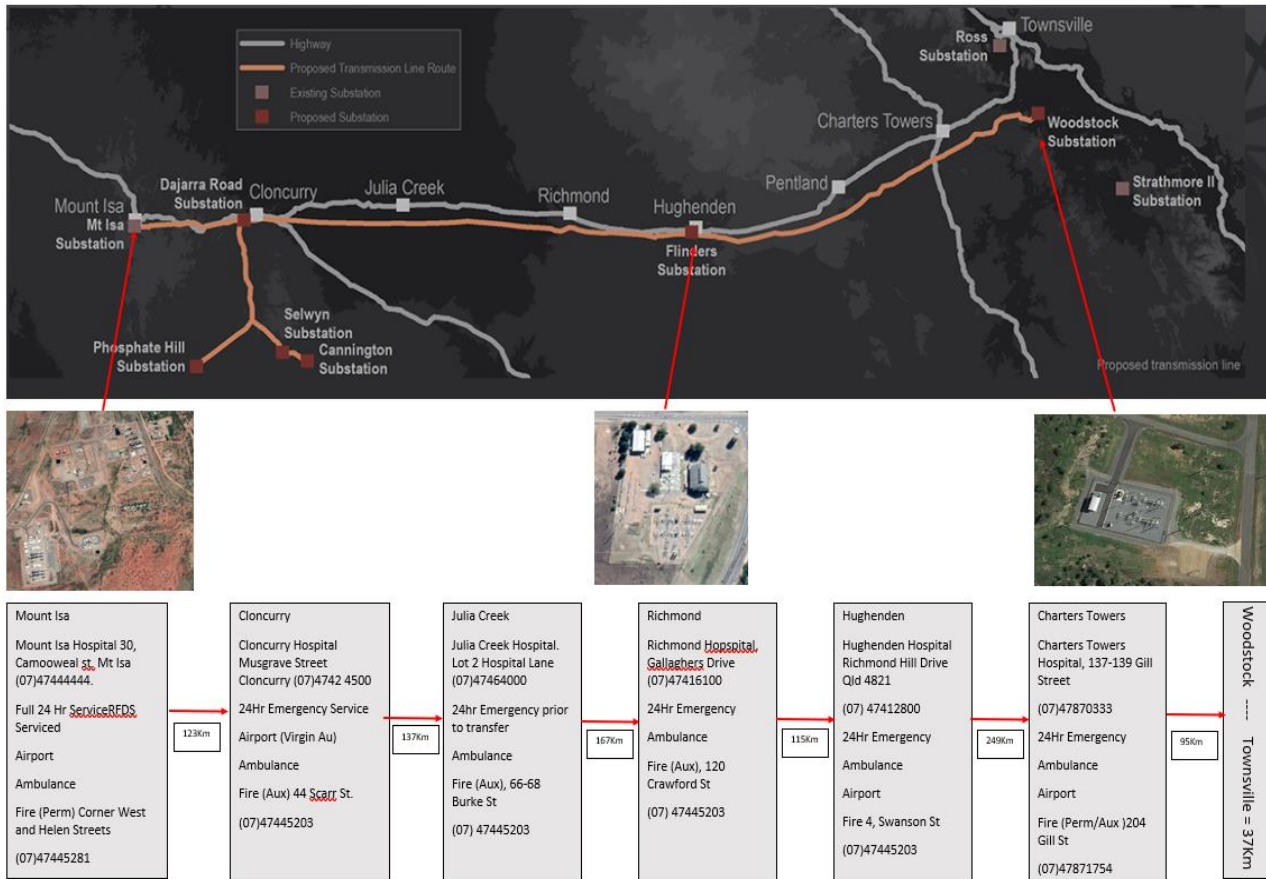


Figure 7: Emergency Response Services, Locations and Details Along the Project

8.3 Bushfire Season Preparedness

Prior to site mobilisation UGL and CPB JV shall ensure bushfire preparation has been completed. It shall include establishing an Emergency Response Team to monitor the progress and planning for the bushfire season. Meetings and inspections shall be conducted on a weekly basis and increase to daily inspections once early indications of a developing bushfire is reported.

Communicate the UGL and CPB JV Bushfire Management Plan to all site personnel, including subcontractors via inductions and toolbox meetings. UGL and CPB JV Management shall prepare and develop plans before bushfire season, including but not limited to the following requirements:

- Updated site personnel room number list
- Updated site personnel mobile phone number and their emergency contact details
- Management Emergency Contact Numbers including afterhours contacts
- Current inventory of equipment or gear that will require securing, removal or storage on site
- Bushfire preparedness checklist that will be completed weekly and provided to UGL and CPB JV safety
- UGL and CPB JV contractors shall conform to the UGL and CPB JV Bushfire Management Plan.

Weekly inspections of all work areas across the site including easements, camps, offices and access tracks to ensure the site can be maintained at a good level of bushfire prevention on site. Inspections are to be conducted by the Site Management and supervisors to ensure that the condition of the site is maintained. Deficiencies identified during inspections are to be immediately addressed via the Hazob system and are to be entered into the Corrective Action Register. Where issues exist that cannot be remedied by the onsite team they should be raised as an action item with Project Management. Reports of readiness are to be included in weekly and monthly reports to the Project Manager.

Evacuation plans are instigated to allow sufficient time for the removal of personnel where appropriate. Vehicle and driver allocations with evacuation route given to nominated persons and Journey management plans to be in place.

Project Management shall ensure that operational and construction activities have ceased, and all personnel are to assist in securing the site and equipment. All appropriate PPE is to be worn. UGL and CPB JV Site Management will chair briefing sessions with subcontractors for updated travel conditions.

A current UGL and CPB JV list of personnel and room numbers is to be made available with site administration and Project Management along with transport requirements in accordance with the Project Traffic Management Plan. UGL and CPB JV site administration to communicate with vendors to cease on site deliveries until all clear is given by Project Management.

8.4 Communication

The Construction Supervisor is responsible for ensuring their workforce is accounted for always and report it to the Site Management. UGL and CPB JV Site Management has ultimate responsibility for ensuring that all personnel are accounted for and that all have been evacuated from site. UGL and CPB JV personnel will be issued with an official debrief following the event.

SITE PROJECT MANAGEMENT – AFTER HOURS CONTACT DETAILS				
Emergency Contact Numbers				
ROLE	NAME	ACCOMMODATION	OFFICE	MOBILE
Construction Manager – Chief Warden	TBA			
Supervisor – Deputy Warden	TBA			
Supervisor - Deputy Warden	TBA			
HSE Advisor	TBA			
Site Admin	TBA			

9. Additional Information

The following information will be provided to Project Management as required.

- Updated site personnel room number list
- Updated site personnel mobile phone number and their emergency contact details
- Updated Project Management Emergency Contact Numbers including after hour's contacts
- Current level of equipment that will require securing, removal or storage
- Current inventory equipment of site
- Proposed methods of securing equipment.

10. Environmental Considerations

- Hydrocarbons and other hazardous materials are to be stored securely and away from Project infrastructure where possible.
- Culverts are to be cleared of debris and checked for effectiveness.
- All waste is to be covered or otherwise secured.
- Vehicles/Plant if left behind must be located in open/cleared areas away from Project infrastructure where possible.