

REF: 6784BF

Date: 10/10/24



BUSH FIRE MANAGEMENT & EMERGENCY RESPONSE PLAN

SOLAR FARM

LOT 2/-/DP 1184528

9439 MITCHELL HIGHWAY

CATHUNDRAL NSW 2823

LGA: Warren Council

Client: Green Gold Energy

HARRIS ENVIRONMENTAL CONSULTING
KATE@HEC.ECO

HARRIS ENVIRONMENTAL CONSULTING**Version Control**

Date Created				
Version Number	Name	Issue Detail	Date Modified	Status
1.0	LJ	BFMERP	17/07/24	Draft
1.0	KH	BFMERP	10/10/24	Final

This document is copyright ©

ASSESSOR & QUALIFICATIONS

Letara Judd



BPAD-L2-46804

GRAD CERT BUSH FIRE PROTECTION, (UWS)
BACHELOR OF ENVSC (HONS) (UOW)




BPAD L3 26947

MASTER BUSH FIRE PROTECTION, UWS
GRAD DIP BUSH FIRE PROTECTION, UWS
GRAD DIP ENVIRO MANG HERTS, UK
GRAD DIP NAT RES UNE
BSC APP SC, AGRICULTURE HAC



ABN 541 287 40 549

Phone: (02) 42 360 954

Mobile: 0403 237 072

Email: kate@hec.eco

DISCLAIMER

The recommendations provided in the summary of this report are a result of the analysis of the proposal in relation to the requirements of Planning for Bushfire Protection 2019. Utmost care has been taken in the preparation of this report; however, there is no guarantee of human error. The intention of this report is to address the submission requirements for Development Applications on bushfire prone land. There is no implied assurance or guarantee the summary conditions will be accepted in the final consent, and there is no way Harris Environmental Consulting is liable for any financial losses incurred should the recommendations in this report not be accepted in the final conditions of consent. This bushfire assessment provides a risk assessment of the bushfire hazard as outlined in the PBP 2019 and AS3959 2018. It does not provide protection against any damages or losses resulting from a bushfire event.

TABLE OF CONTENTS

1	Introduction.....	5
2	Facility Details	5
3	Site Description.....	7
4	Landscape Bushfire Risk Profile	8
4.1	Orana.....	8
4.2	Bushfire Hazard Assessment	8
4.2.1	Classified Vegetation	9
4.2.2	Effective Slope	9
4.2.3	Potential Bush Fire Behaviour	11
5	BUSHFIRE RISK ANALYSIS	12
5.1	Asset Identification	12
5.1.1	Human Settlements:.....	12
5.1.2	Economic:	12
5.1.3	Environmental:	12
5.1.4	Cultural	12
5.2	Risk Categories.....	12
5.2.1	Primary risk:.....	12
5.2.2	Secondary risk	12
5.3	Risk Register and Risk Management Matrix.....	13
6	Bushfire Management and Protection Measures	14
6.1	Asset Protection Zones	14
6.2	Bushfire Management Zones	14
6.3	Construction Standards	16
6.4	Safe Operational Access.....	17
6.5	Provision of Services	18
6.6	Site Management.....	18
6.7	Total Fire Bans	19
6.8	Fire Safety	19
7	Emergency Response	20
7.1	Emergency Planning Committee	20
7.2	Emergency Control Organisation	20
7.3	Roles and Responsibilities.....	21
7.3.1	Pre-emergency Task	22
7.3.2	Emergency Task.....	22
7.3.3	Post-Emergency Task.....	22
7.4	Evacuation Considerations	23
7.4.1	Evacuation Centres.....	23
7.5	Preparation	26

7.6	Monitoring Bush Fire Treats	27
7.6.1	Information.....	27
7.6.2	Fire Danger Rating	27
7.6.3	Fires Near Me	28
7.6.4	Radio Updates	28
7.6.5	Road Closures	28
7.6.6	Early Evacuation	28
7.7	Emergency	29
7.8	Post-Emergency Task	29
8	References.....	30

FIGURES

Figure 1 - Proposed Development	6
Figure 2 - Site Location.....	7
Figure 3 – Bushfire Prone Land Map	9
Figure 4 – Classified vegetation and effective slopes influencing bushfire behaviour.....	10
Figure 5 - Land Management Zones	14
Figure 6 – Access from public road to site	17
Figure 7 - Evacuation route South, East and West	24
Figure 8 - Evacuation route West and North	25
Figure 9 – Bush Management and Emergency Response Plan	37

TABLES

Table 1: Bushfire management zones.	15
Table 2: Biodiversity thresholds per Orana BFRMP	16
Table 3: Travel times rounded up to the nearest minute.	23

1 INTRODUCTION

Chris Smith & Associates engaged Harris Environmental Consulting to prepare a Bush Fire Management and Emergency Response Plan (the plan) for the proposed Solar Farm development in Lot 2 in DP 1184528, 9439 Mitchell Highway, Cathundral NSW 2823 (the subject site).

Warren Council maps all land within and surrounding the subject site as Bush Fire Prone Land (BFPL) in accordance with section 10.3 of the *Environmental Planning & Assessment Act 1979* (EP&A Act).

The plan has been prepared per the *Planning for Bush Fire Protection 2019* (PBP) requirements, the NSW RFS document: *A guide to developing a bush fire emergency management and evacuation plan*, and Australian Standard AS 3745:2010 *Planning for emergencies in facilities*.

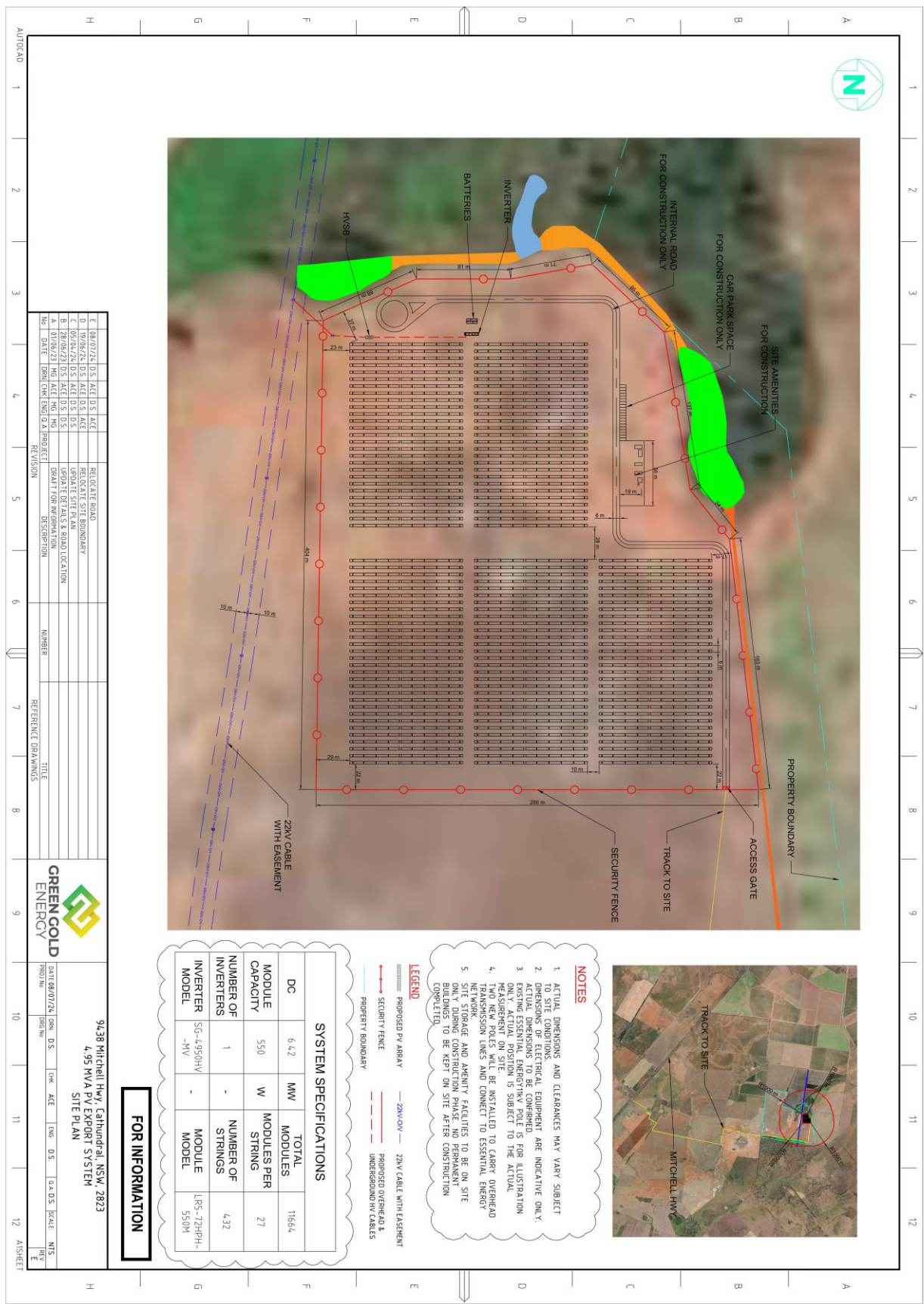
The plan's purpose is to evaluate the site's bushfire risk profile and identify a package of bushfire management measures and emergency response actions and procedures that can be taken to protect human life and minimise impacts on assets from the threat of a bushfire.

2 FACILITY DETAILS

The proposed development involves the construction and operation of a solar farm with an output capacity (DC) of approximately 6.42 megawatts peak (MWp) and an AC capacity of 4.95 Megawatts (MWac).

The development will include solar panels and a tracking system, an HV switchboard platform, batteries and inverter, site amenities (construction stage only) property access roads, car parks, property fences, landscaping, and all associated infrastructure.

Figure 1 - Proposed Development

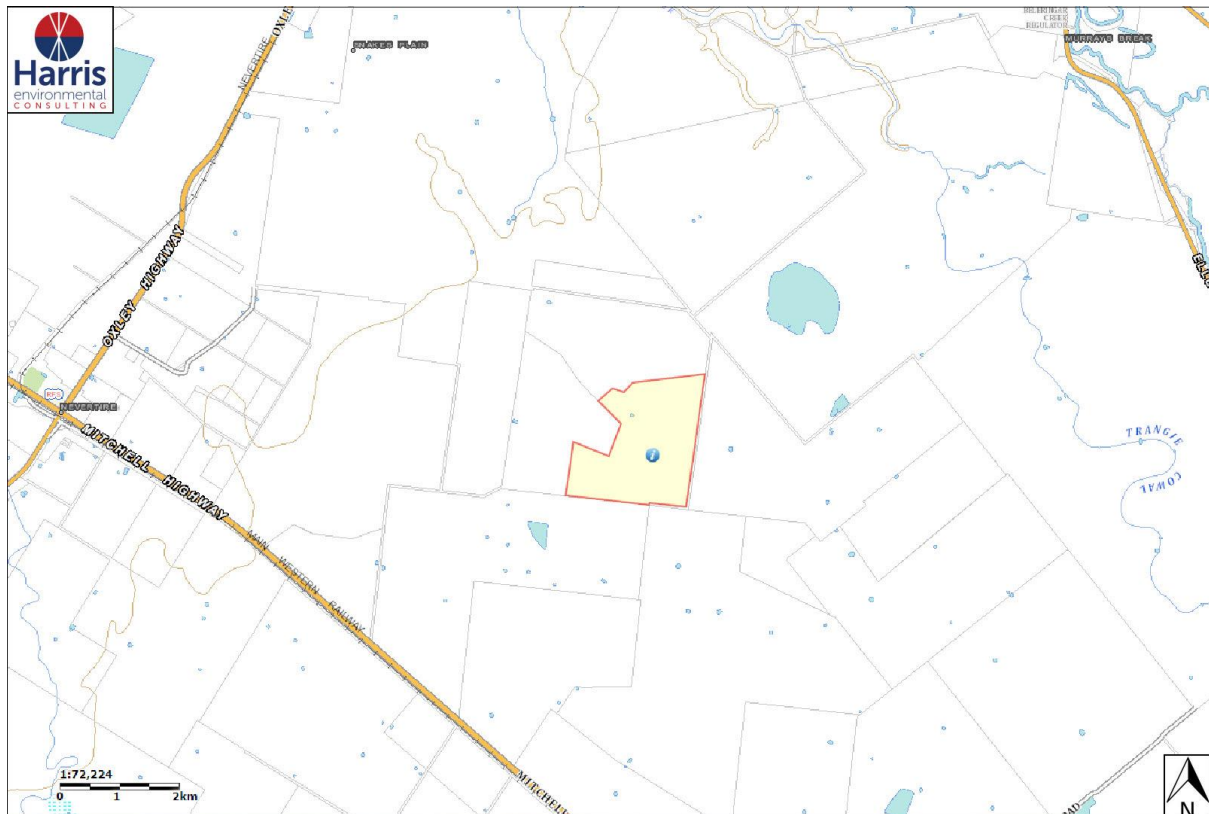


3 SITE DESCRIPTION

The subject site is located in the Warren Council Local Government Area (LGA), on the Mitchell Highway, 21 km west of Trangie and 70 kms east of Nyngan in the Orana Region of central New South Wales.

The subject site is zoned RU1—Primary Production under the Warren Local Environmental Plan 2012, and all land use within and surrounding it is consistent with agricultural activities and utilities.

Figure 2 - Site Location



4 LANDSCAPE BUSHFIRE RISK PROFILE

4.1 Orana

The subject site is in the Orana Region of central NSW in the Orana Bush Fire Management Committee (BFMC) area. The Orana BFMC area covers roughly 1,280,600 ha of land and incorporates the Bogan, Bourke, Brewarrina, Cobar, Coonamble, Dubbo Region, Gilgandra, Mid-Western Region, Narromine, Walgett, Warren and Warrumbungle LGAs.

The Orana BFMC area is generally warm to hot between the summer months, with temperatures exceeding 38°C for many days. Mean average rainfall for the area is between 500-600mm per annum which is evenly distributed throughout the year, with January being the wettest month.

The bushfire season typically extends between early October and late March.

Prevailing weather conditions associated with the bushfire season in the Orana BFMC are north-westerly winds and high daily temperatures causing consecutive high pressure systems associated with winds. This results in low relative humidity below 20% and hot dry winds.

The Orana BFMC area experiences an average of 200-250 bushfires annually, of which ten are classified as major fires.

The primary sources of ignition in the Orana Zone BFMC area are:

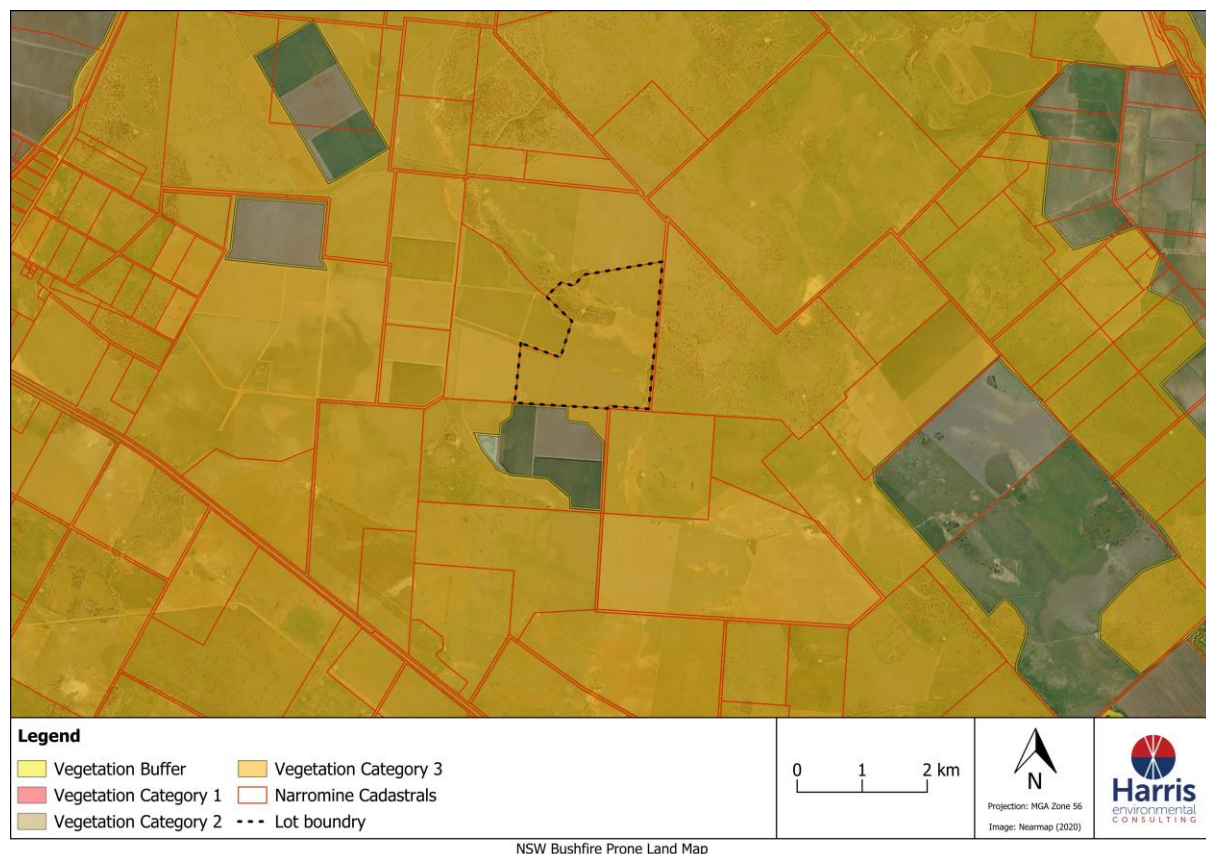
- Unintentional fires caused by human fault
- Farm Machinery
- Malicious fires
- Escaped campfires
- Lightning strikes;
- Electrical power Supply Lines;
- Burning of stolen vehicles;
- Escaped controlled burns.

4.2 Bushfire Hazard Assessment

All land surrounding the subject site has been historically modified and disturbed to support agricultural activities.

Warren Council maps the BFPL within and surrounding the subject site as Category 3 bushfire-prone vegetation.

Vegetation Category 3 is considered to be medium bushfire-risk vegetation. It is higher in bushfire risk than Category 2 (and the excluded areas) but lower than Category 1. It is represented as dark orange on a BFPL map and consists of Grasslands, freshwater wetlands, semi-arid woodlands, alpine complexes, and arid shrublands.

Figure 3 – Bushfire Prone Land Map

4.2.1 Classified Vegetation

The subject site and all surrounding land have been significantly modified to support agricultural activities.

The surrounding vegetation is classified Grasslands. Grasslands have an estimated surface and total fuel load of 6 t/ha.

To the north west the vegetation is classified as 'Woodland' in accordance with PBP 2019. Woodlands have an estimated surface and total fuel load of 20.2 t/ha.

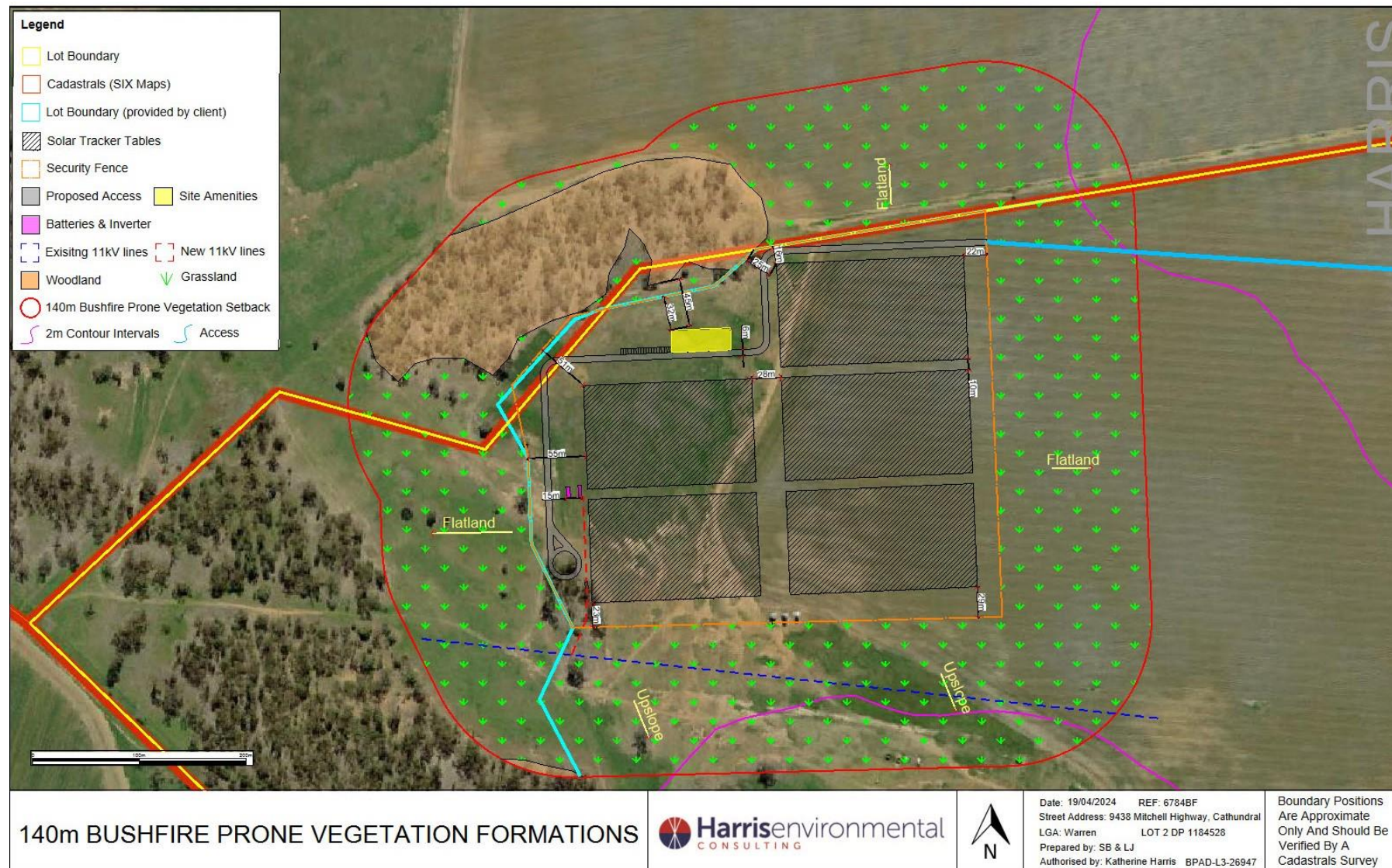
4.2.2 Effective Slope

Australian Standard AS3959-2018 Construction of buildings in bushfire-prone areas and PBP 2019 identify that the slope of the land under the classified vegetation is much more important than the slope between the proposed development and the edge of the classified vegetation.

The effective slopes influencing bushfire behaviour towards the proposed development were assessed using elevation data from Spatial Services NSW, April 2024.

Generally, the topography of the subject site is flatland. .

Figure 4 – Classified vegetation and effective slopes influencing bushfire behaviour



4.2.3 Potential Bush Fire Behaviour

Based on the assessment of land use, classified vegetation, and effective slopes within 140 metres of the subject site, the predominant risk to the proposed development is likely to be from grassland fires impacting the subject site and spreading from the subject site into the adjoining land.

The bushfire risk posed by a grassland hazard differs from fires in other vegetation communities. Fires burning through a grassland hazard generally spread rapidly at higher intensities and have shorter residence times. Ember production is limited, smaller, and fewer in number than those produced from forest fires, but it can still propagate spot fires ahead of the main fire front.

5 BUSHFIRE RISK ANALYSIS

The bushfire risk to people, property, and the environment has been assessed in relation to the likelihood and consequence per the Australian Standard AS ISO 310000 *Risk Management Guidelines*.

The plan identifies assets within the site, protection measures and management zones.

5.1 Asset Identification

Assets are defined as anything valued by the community, including agricultural land, livestock, heritage buildings and places, infrastructure, the environment, and commercial and industrial buildings and equipment that may be at risk from bushfires.

Assets within the site have been divided into four asset types.

5.1.1 Human Settlements:

- Residential areas, including urban bushland interface areas and rural properties, and
- Other human settlement areas, including commercial and industrial areas.

5.1.2 Economic:

- Built assets within the subject site, e.g. the solar farm array and associated infrastructure and facilities.
- Commercial operation of the facility.

5.1.3 Environmental:

- Threatened species, populations and ecological communities within the site; and
- Locally important species and ecological communities that are susceptible to fire.

5.1.4 Cultural

- Aboriginal significance – Aboriginal places and items of significance;
- Non-indigenous heritage – places and items arising from the early occupation of non-indigenous settlers; and
- Other cultural assets that are significant to the local community.

5.2 Risk Categories

The risk categories associated with the construction and operations of the facility are separated into primary and secondary risks.

5.2.1 Primary risk:

- The direct or indirect physical and psychological impact on people, property and the environment (assets).

5.2.2 Secondary risk

- Legal, moral and ethical associated with:

- Legal action or litigation
- Breach of legal obligation
- Damages to reputation
- Criminal.

5.3 Risk Register and Risk Management Matrix

Refer to Appendix 1

6 BUSHFIRE MANAGEMENT AND PROTECTION MEASURES

The Bushfire Management Plan has been prepared in accordance with the NSW Rural Fire Service *Model Bushfire Risk Management Plan*. The plan identifies a package of bushfire management and protection measures that can be taken to protect life and minimise impacts on assets from bushfires.

6.1 Asset Protection Zones

An Asset Protection Zone (APZ) intends to minimise the risk of bushfire attacks and maintain reduced fuel loads to ensure radiant heat levels at buildings and assets are below critical limits. The APZ provides a safe operational environment for emergency service personnel undertaking operations.

The majority of the APZ is located in Grassland that should be kept mown (<100mm in height). An APZ around the assets within the fenced compound provides a defensible space and safe operational access to all assets and associated facilities.

The vegetation on the south west of the site should be separated 2-5 m, should not overhang any infrastructure and have lower limbs removed up to 2 m.

6.2 Bushfire Management Zones

Bushfire management zones have been identified within the subject site based on the bushfire risk profile and risk analysis detailed in section 5. The management zones are illustrated in Figure 5 and detailed in Table 1:

Figure 5 - Land Management Zones

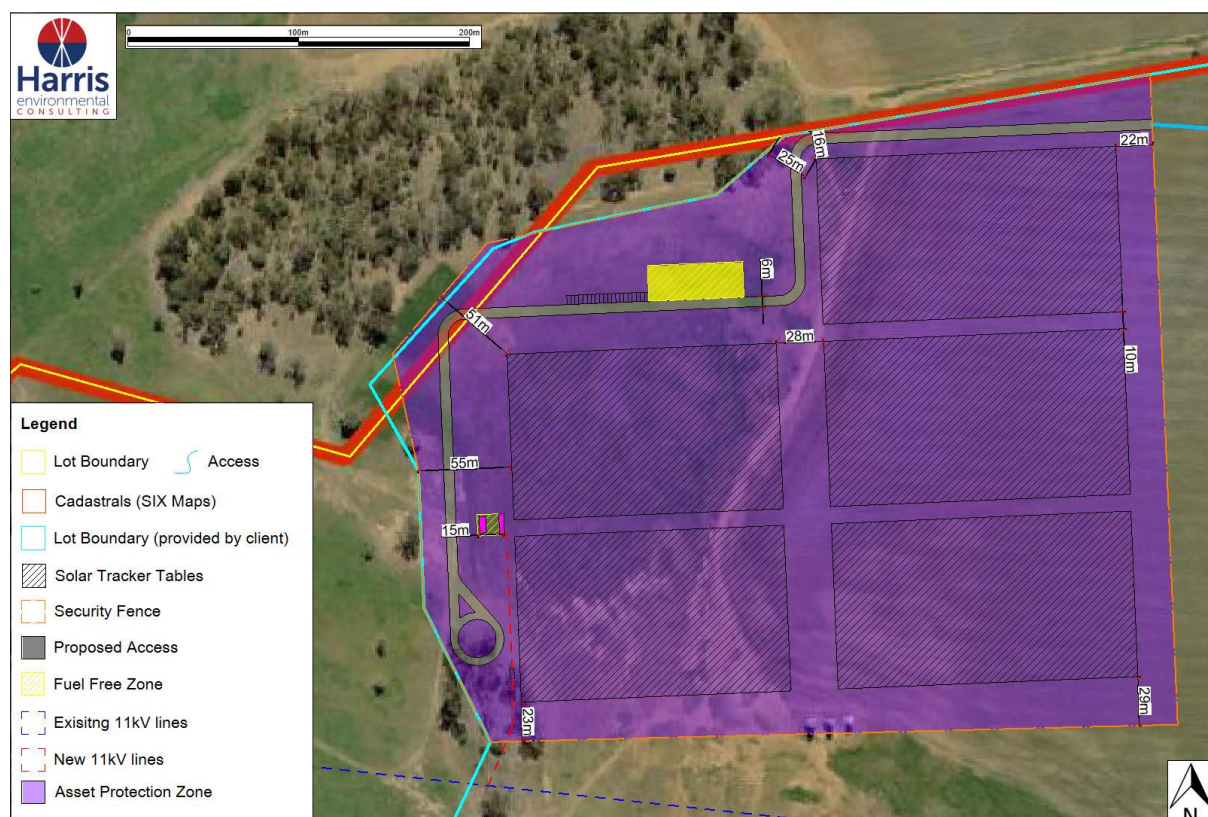


Table 1: Bushfire management zones.

Fuel Free Zone	
Description	A fuel-free area under and surrounding critical assets.
Purpose	The primary purpose of a fuel-free area is to prevent the spread of fire and inhibit fire propagation from spot fires.
Location	Immediately adjacent critical assets at risk of bushfire. 1-5m
Tactics	• Gravel or concrete. • Herbicide application.
Management Intensity	Managed at a high intensity to minimise available fuel loads.
Asset Protection Zones(APZ):	
Description	A fuel-reduced area surrounding an asset that creates a buffer from the bushfire-prone vegetation and provides a defensible space for firefighting operations.
Purpose	The primary purpose of an APZ is to protect human life (including residents, community members, and firefighters), property, and highly valued public assets (such as human settlements and economic, environmental, and cultural items) from the direct impacts of bushfires.
Location	APZs are generally implemented within the development site and immediately adjacent assets at risk of bushfire to provide separation from bushfire-prone vegetation.
Tactics	• Slashing and mowing. • Herbicide application. • Grazing. • Carry out selective hand clearing. • Grassland within the APZ should be kept mown (as a guide, grass should be kept to no more than 100mm in height). • The APZ should be established before the commencement of works and maintained for the life of the development. • The landscape screening area should maintained to ensure the following: • Tree canopy cover should be less than 15% of the total APZ area at maturity, • Trees at maturity should not touch or overhang the batteries, MVPS, or other critical facilities, • Lower tree limbs should be removed up to a height of 2 metres above the ground,
Management Intensity	Vegetation within the APZ is managed at a high intensity to minimise available fuel loads. As a minimum, APZs are to be treated as required to maintain the specifications of the APZ. APZs should be audited bi-annually

When planning fire management activities, the intensity and frequency of management should be consistent with the biodiversity thresholds for each vegetation formation. As

detailed in Table 2, the biodiversity thresholds reflect the minimum and maximum intervals between the use of prescribed burning to manage potential fuel loads.

Table 2: Biodiversity thresholds per Orana BFRMP

Vegetation Formation	Min Threshold	Max Threshold	Notes
Grassland	2	10	Occasional intervals greater than 7 years should be included. Maximum intervals should be approximately 10 years.
Grassy woodland	5	40	Minimum interval of 10 years should apply in the southern Tablelands area. Occasional intervals greater than 15 years may be desirable

6.3 Construction Standards

To ensure the proposed development is afforded a suitable package of bushfire protection measures, all critical assets should be constructed from non-combustible materials designed to mitigate the risk of flame damage, ember attack and radiant heat. External services should be shielded or designed to withstand 40kWm² of radiant heat. Where applicable, all critical assets should include ember protection.

Ember protection can be achieved by enclosing all openings or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm. This includes subfloor areas, open windows, vents, weep holes and eaves. External doors should be fitted with draft excluders.

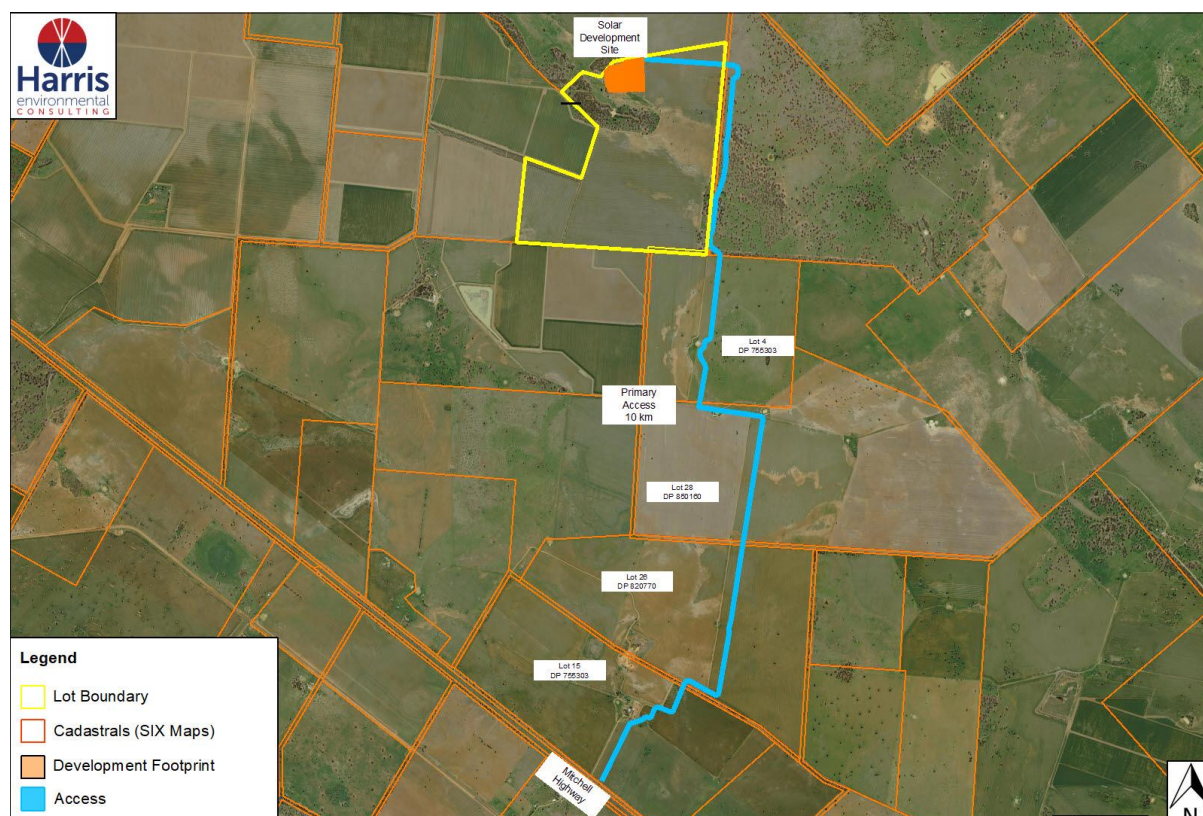
6.4 Safe Operational Access

The subject site has access to the Mitchell Highway approximately 10 km south of the development and the Oxley Highway approximately 11 km west of the development. These distances are traversed through existing property access roads.

A defensible space managed as an APZ will be provided around the solar array within the fenced compound. Internal property access is required to comply with the PBP- Property Access Table 7.4a. This includes:

- A minimum carriageway width of four metres;
- provide enough turning room for a fire tanker that requires an inner minimum turning radius of 6 m and outer minimum radius of 12 m;
- a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches;
- Curves a minimum inner radius of six metres;
- The minimum distance between inner and outer curves is six metres;
- The cross fall is not more than 10 degrees;
- Maximum grades for sealed roads do not exceed 15 degrees (28 per cent) and not more than 10 degrees (18 percent) for unsealed roads;
- The internal road surfaces and bridges have a capacity to carry fully loaded firefighting vehicles (23 tonnes) and provide signage that clearly indicates the bridge capacity; and
- There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available

Figure 6 – Access from public road to site



6.5 Provision of Services

The proposed development will not be connected to reticulated water. A minimum of 20,000 litres of static water should be located within the development site to ensure adequate water is provided to protect assets during and after the passage of a bushfire.

Above-ground tanks must be manufactured of concrete or metal, and raised tanks must have protected stands. Pipes external to buildings must be metal, including taps, and pumps must be shielded. Underground tanks should have an access hole of 200 mm and a hardened ground surface within 4 metres of the access hole. A suitable connection for firefighting purposes, such as a 65mm Storz outlet and a gate or ball valve, should be provided where required.

All above-ground electrical transmission lines should be managed under specifications issued by the managing authority.

6.6 Site Management

All land management must be undertaken according to license conditions and legislation, whether inside or outside the subject site.

Under the *Rural Fires Act 1997*, the RFS can direct landholders to undertake hazard reduction activities on their property.

6.7 Total Fire Bans

During the facility's construction and operation phase, the safe work procedures and restrictions associated with a total fire ban, as outlined by the NSW RFS, should be followed.

A total fire ban means no fires out in the open. A total fire ban helps limit the potential for fires to develop.

During a total fire ban, you cannot light, maintain or use a fire in the open or carry out any activity in the open that causes or is likely to cause a fire.

Call the local NSW RFS Fire Control Centre or local Council for further advice.



6.8 Fire Safety

Based on the nature of the development, there is potential for fires to initiate from the components within the site.

The proposed development provides hardware for fire safety and suppression including:

- Fire extinguisher;
- Inbuilt Firefighting system in BESS containers;
- Water tanks.

This plan does not include specific actions for operating fire safety equipment. However, for the site to be adequately prepared for a fire emergency, all equipment should be maintained, tested and site occupants trained for equipment use. It is every landholder's responsibility to manage the bush fire hazards on their property. All steps should be taken to stop fires within the site and prevent the fire from leaving the property.

7 EMERGENCY RESPONSE

7.1 Emergency Planning Committee

The emergency response and protocols are based on similar projects. Detailed protocols and measures are subject to reasonable changes and should be confirmed by the appointed Emergency Planning Committee (EPC).

The persons responsible for managing the site should form an EPC consisting of at least two people.

The EPC is responsible for implementing and maintaining the emergency plan, emergency response procedures, and related training. The duties of the EPC include the following:

- Ensuring that resources are provided to enable the development and implementation of the emergency plan;
- Ensuring that the emergency plan is readily identifiable and available to the appropriate persons;
- Ensuring those with control of emergencies operate per the emergency plan, that this person/persons are current and readily available, and continue to operate at all times;
- Authorise and implement the emergency plan. The following shall apply to the implementation:
 - awareness of the emergency response procedures,
 - training,
 - testing emergency procedures, and
 - reviewing emergency procedures;
- Ensuring the emergency procedures remain viable and effective by testing and reviewing policies as required;
- Establishing strategies to ensure all onsite personnel are made aware of emergency response procedures;
- Ensuring a permanent record of events for emergencies is compiled and retained;
- Identifying opportunities for improvement in the emergency plan;
- Obtain professional advice on the level of indemnity provided to EPC members and be aware of the level of the indemnity supplied; and
- Shall meet before the inception of the Plan and as required to ensure the Plan is relevant and up to date.

7.2 Emergency Control Organisation

The Emergency Control Organisation (ECO) is responsible for organising and supervising the safe movement of onsite personnel in an emergency. During emergencies, instructions given by the ECO personnel shall take precedence over the normal management structure.

This Plan documents the pre-emergency, emergency and post-emergency duties and responsibilities during a bushfire emergency.

The following roles are recommended to the appropriate staff: Chief Warden, Deputy Chief Warden, Communications Officer, Safety Officers, and First Aid Officers. A Chief Warden is required as a minimum.

Selection criteria for ECO personnel:

- Be capable of performing their duties;
- Have leadership qualities and the ability to command authority;
- Display practical decision-making skills;
- Demonstrate the capability to remain calm under pressure;
- Be available onsite to undertake their appointed duties
- Possess practical communication skills; and
- Be able to undertake relevant training.

7.3 Roles and Responsibilities

Construction Stage

Chief Warden	
Position:	
Contact Details:	
The Chief Fire Warden shall be identifiable by wearing white (white helmet, cap, hat or vest) with the words "Chief Fire Warden" prominently displayed.	

Deputy Warden	
Position:	
Contact Details:	
The Deputy Warden shall be identifiable by wearing white (white helmet, cap, hat or vest) with the words "Deputy Warden" prominently displayed.	

Operational & Maintenance Stage

For the Operational Stage, emergency personnel's roles and responsibilities and fire emergency protocol are to be in accordance with Appendix I.

Chief Warden/ HSE Manager	
Position:	
Contact Details:	
The Chief Fire Warden shall be identifiable and, if applicable, wearing white (white helmet, cap, hat or vest) with the words "Chief Fire Warden" prominently displayed.	

Deputy Warden/ O&M Manager	
Position:	
Contact Details:	
The Deputy Warden shall be identifiable and, if applicable, wearing white (white helmet, cap, hat or vest) with the words "Deputy Warden" prominently displayed.	

7.3.1 Pre-emergency Task

Chief Warden

- Maintain a current register of ECO members;
- Replace ECO members when a position becomes vacant;
- Conduct regular exercises;
- Ensure the emergency response procedures are kept up to date;
- Attend meetings of the EPC as appropriate;
- Attend training and emergency exercises as required by EPC; and
- Ensure personal ECO identification is available.

Deputy Warden

- Ensure personal proficiency in the operation of communication equipment;
- Maintained records and logbooks and make them available for emergency response;
- Ensure that ECO members are proficient in the use of the communication equipment;
- Ensure that emergency communication contact details are up to date;
- Attend training and emergency exercises as required by EPC;
- Confirm sufficient wardens for the area of responsibility;
- Coordinate the completion of Personal Emergency Evacuation Plans (PEEP) documentation;
- Report on the deficiencies of the emergency equipment;
- Ensure that wardens have communicated the emergency response procedures to all occupants within their nominated areas;
- Ensure that occupants are aware of the identity of their wardens;
- Coordinate safety practices by wardens throughout their area of responsibility;
- Ensure that all occupants are aware of the emergency response procedures; and
- Carry out safety practices (e.g. Clear access to emergency equipment).

7.3.2 Emergency Task

Refer to the Bushfire Emergency Response Plan for actions.

7.3.3 Post-Emergency Task

Chief Warden:

- When the emergency incident is rendered safe, or the Emergency Service returns control, notify the ECO members to have occupants return to the site, as appropriate;
- Organise a debrief with ECO members and, where applicable, with any attending Emergency Service; and
- Compile a report for the EPC and management.

Deputy Warden:

- Records events and actions during the emergency for debriefing;
- Clean and service used specialised equipment; and
- Replace specialised equipment when necessary.

7.4 Evacuation Considerations

Four potential safer places have been identified north and south of the subject site. If the site is occupied during a bushfire event, and local emergency services have issued evacuation orders, the potential locations are:

- West – Open Space - Nevertire Community Park
- North – Open Space - Carter Oval
- South East – Open Space - Trangie Agricultural Research Centre Oval; and
- South – Open Space - Burns Oval / Pool Complex

As illustrated in Figure 7, the entire road network associated with access and egress from the subject site traverses agricultural and rural land.

During an emergency, the anticipated times for evacuation to the designated safer places north and southeast have been calculated, as shown in Table 3 below.

Table 3: Travel times rounded up to the nearest minute.

Average Speed Km/h	Travel time to Nevertire Community Park– 22 km west	Travel time to Carter Oval.– 41 km north	Travel time to Trangie Agricultural Research Centre Oval 32 km south east	Travel time to Burns Oval / Pool Complex 32.5 km south
50 km/h	27 minutes	49 minutes	39 minutes	39 minutes
25 km/h	53 minutes	1 hour 38 minutes	1 hour 17 minutes	1 hour 17 minutes
10 km/h	2 hour 12 minutes	4 hours 6 minutes	3 hour 12 minutes	3 hour 12 minutes
5 km/h	4 hours 24 minutes	8 hours 12 minutes	6 hour 24 minutes	6 hour 24 minutes

7.4.1 Evacuation Centres

In a major bushfire event, evacuation centres will likely be established to meet the needs of those affected by the bushfires. Evacuation centres are generally existing facilities that can often open with little notice to provide immediate assistance.

It is advised that the Site Manager monitors evacuation centres established in the area and follows the advice of the emergency service when directed to evacuate. The location of evacuation centres is likely to impact on-road use and expected travel times in the event of an evacuation.

Figure 7 - Evacuation route South, East and West

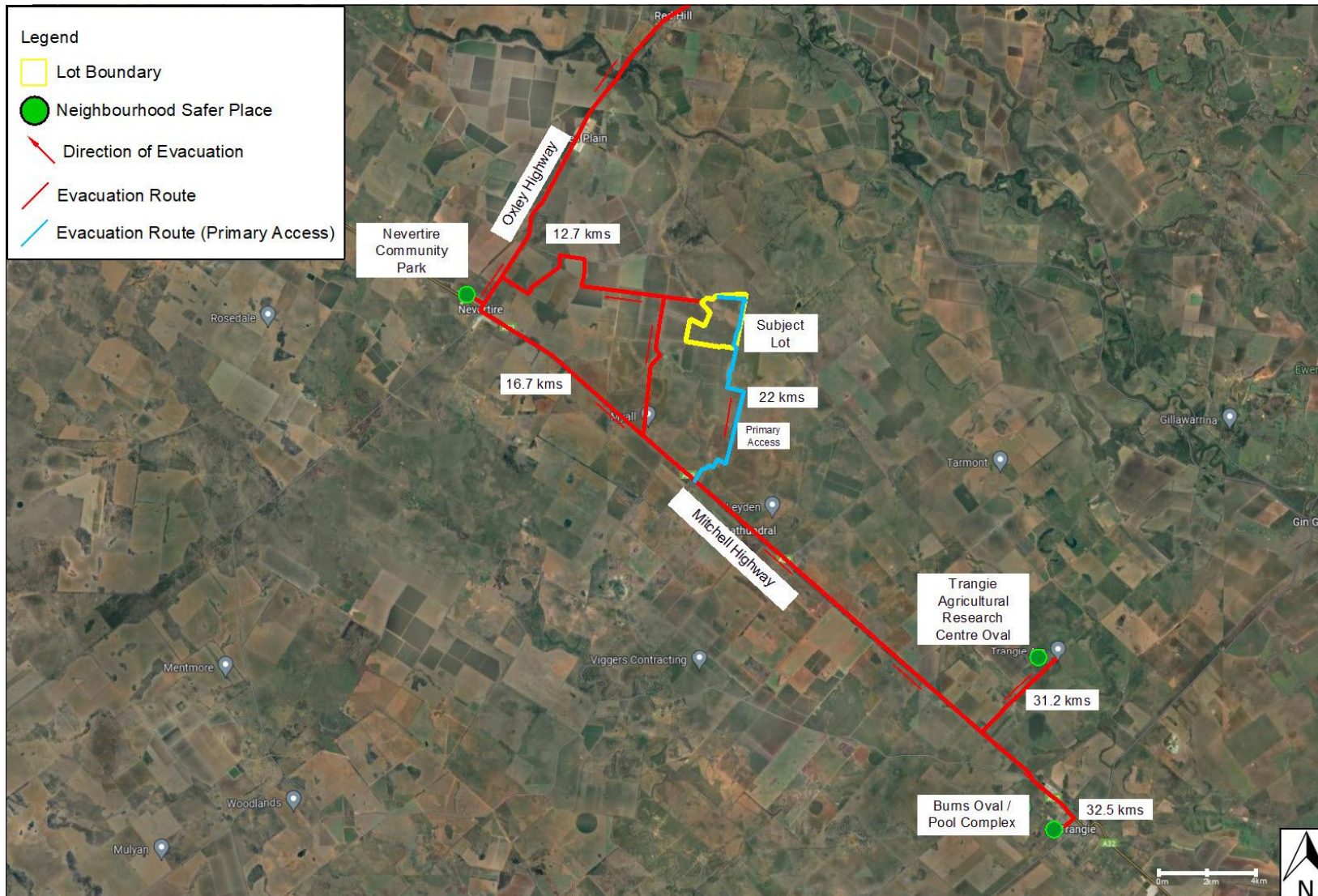
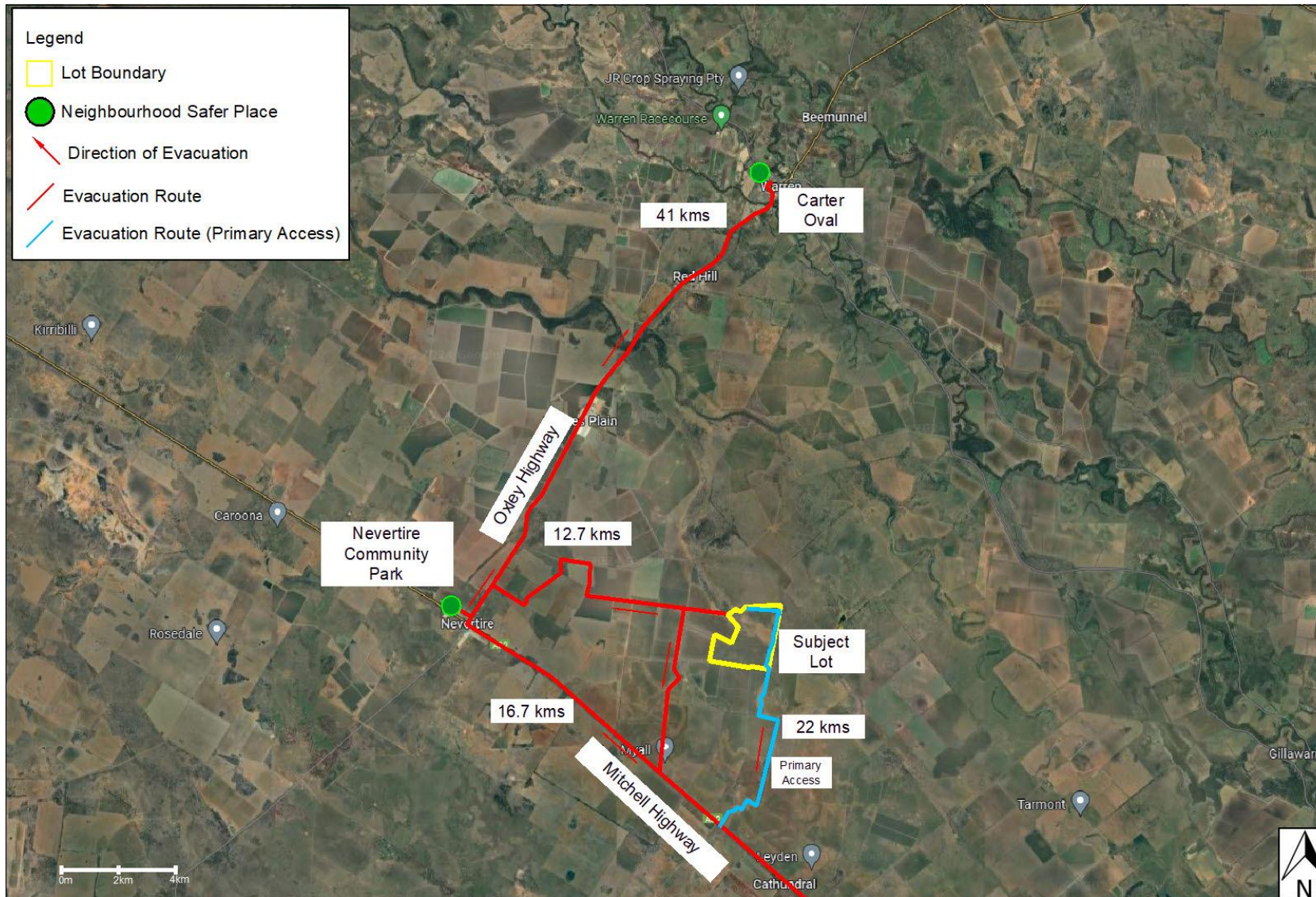


Figure 8 - Evacuation route West and North



7.5 Preparation

The Chief Warden is to prepare ahead of the start of the fire season and potential bushfire events by undertaking the following steps.

Site:

- Ensure the Plan is up to date;
- Ensure any firefighting equipment is serviceable and available. e.g. Ladders, spades, shovels, mops, buckets, and hoses;
- Ensure areas around the assets are prepared and maintained;
- Ensure all landscaping within the site is maintained to an APZ standard;
- Ensure onsite powerlines are maintained, liaise with relevant providers;
- Check and update external emergency contact numbers; and
- Monitoring risks from adjoining private and public land, maintaining communication with adjoining landowners and land managers for any changes in management or increased risks to the site.

Onsite personnel:

- Have all onsite personnel details easily identifiable to account for all persons on site;
- Have informative signage in key locations in the site (front gate) outlining the emergency management procedures and bushfire protection measures;
- Have a site layout plan that shows the designated assembly areas and evacuation details available for all onsite personnel; and
- Have emergency kits available: Whistle, portable battery radio, waterproof torch, spare batteries, first aid kit and manual, waterproof bag for valuables, emergency contact details, duct and masking tape, non-perishable food and water, and pocket knife.

Planning:

- Evacuation safety is dependent on several factors, such as fire danger rating, temperature, wind strength and direction. The time to evacuate may take more than expected during weekends or school holidays when traffic is heavy;
- When advised to evacuate, the early departure of all onsite personnel before emergency services arrive is recommended.
- Similarly, when advised to evacuate, early evacuation is recommended as it is not appropriate to move people through areas with heaving smoke or where a bushfire may be burning or is predicted to burn through;
- The Chief Warden is to check with emergency services and the Live Traffic NSW website: <https://www.livetraffic.com/>;

7.6 Monitoring Bush Fire Treats

7.6.1 Information

For information on bushfires, call the **Bush Fire Information Line**:

- 1800 NSW RFS (**1800 679 737**).

The two systems used by the Rural Fire Service which provide triggers for evacuation are:

- **The Fire Danger Ratings**- used **before** a fire has started; and
- **The Bush Fire Alerts**- are used **once** a fire has started.

Both of these warning systems are described below.

7.6.2 Fire Danger Rating

Before a fire starts, monitor the **Fire Danger Ratings** daily at www.rfs.nsw.gov.au/fdr. The higher the fire danger rating, the more dangerous a fire is likely to be.

These ratings are based on predicted conditions such as the temperature, humidity, wind and dryness of the landscape. It indicates how a bushfire may act, what impacts could occur and the consequences of a bushfire in the identified conditions. The table below and the graph are taken from the RFS Bushfire Survival Plan and show how the fire danger gets higher, so does the potential loss of life and property.

FIRE DANGER RATING	WHAT YOU SHOULD DO
CATASTROPHIC	For your survival, leave bush fire risk areas. › These are the most dangerous conditions for a fire. › Your life may depend on the decisions you make, even before there is a fire. › Stay safe by going to a safer location early in the morning or the night before. › Homes cannot withstand fires in these conditions. › You may not be able to leave and help may not be available.
EXTREME	Take action now to protect your life and property. › These are dangerous fire conditions. › Check your bush fire plan and ensure that your property is fire ready. › If a fire starts, take immediate action. › If you and your property are not prepared to the highest level, go to a safer location well before the fire impacts. › Reconsider travel through bush fire risk areas.
HIGH	Be ready to act. › There's a heightened risk. Be alert for fires in your area. › Decide what you will do if a fire starts. › If a fire starts, your life and property may be at risk. The safest option is to avoid bush fire risk areas.
MODERATE	Plan and prepare. › Stay up to date and be ready to act if there is a fire.
NO RATING	› Fire danger ratings are used on days when you need to take action. On days of minimal risk, 'No Rating' will be issued.

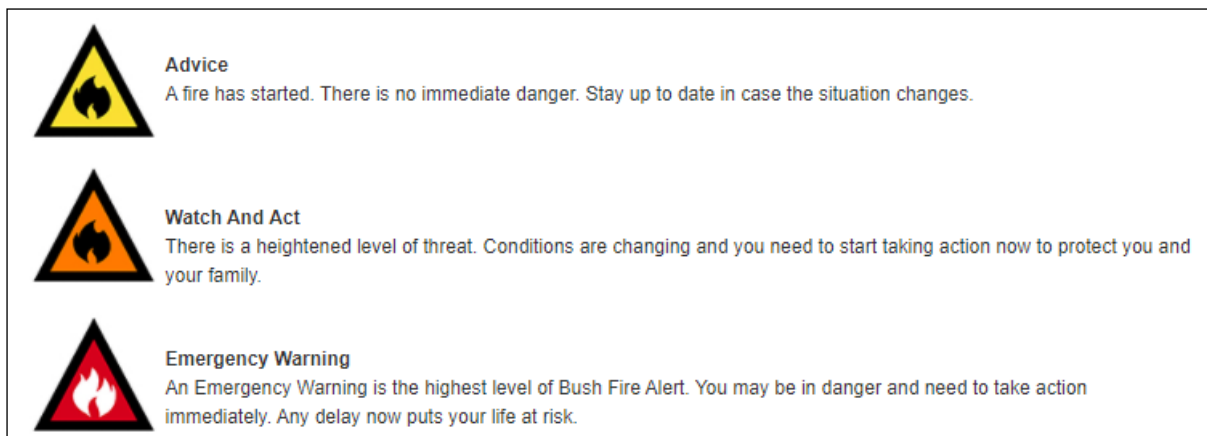
7.6.3 Fires Near Me

After a fire has started, the 'Fires Near Me' website and mobile application provide information and warnings about bushfires and other incidents attended by the NSW RFS.

Website: <https://www.rfs.nsw.gov.au/fire-information/fires-near-me>

Use the FIRES NEAR ME mobile application to help you stay up to date on bushfires in your area.

The following alert levels are provided to give you an indication of the level of threat from a fire:



7.6.4 Radio Updates

In an emergency, ABC Radio can provide up-to-date information. The local stations for the Warren LGA include:

- ABC Western Plains – **99.3 FM Tottenham**
- ABC Central West – **549 AM Cumnock**
- ABC RN - **107.9 FM Central Western Slopes**
- ABC New Radio - **106.3 FM Central Western Slopes**

7.6.5 Road Closures

The unpredictable nature of bushfires may result in roads being closed without warning. Where emergency services have issued evacuation orders, leaving early is always the safest option. Information on road closures can be obtained from emergency services and found on the Live Traffic NSW website: <https://www.livetraffic.com/>

7.6.6 Early Evacuation

In a bushfire emergency, emergency services may issue evacuation orders. If off-site evacuation is required, Evacuation Centres will often be set up to accommodate those evacuating. The evacuation direction will depend highly on the existing fire conditions, and advice should be sought from emergency services concerning suitable evacuation routes to the designated Evacuation Centres.

7.7 Emergency

Refer to the Bushfire Emergency Response Plan for actions.

7.8 Post-Emergency Task

- The Chief Warden should seek advice from emergency services before returning to the site;
- A record of the emergency response and evacuation should be taken, and the Emergency Plan updated where applicable.

8 REFERENCES

- Australia, G. (2019). *ELVIS - Elevation - Foundation Spatial Data*. Elevation.fsdf.org.au. Available at: <http://elevation.fsdf.org.au/>
- Keith, D. (2004). "Ocean Shores to Desert Dunes" Department of Environment and Conservation, Sydney
- National Association of Steel-Framed Housing (2014) *NASH Standard Steel Framed Construction in Bushfire Areas*
- NSW Department of Planning and Environment. Planning Portal. Accessed at: <https://www.planningportal.nsw.gov.au/>
- NSW Office of Environment and Heritage (2020). Biodiversity Value Map. Accessed at: <https://www.imbc.nsw.gov.au/Maps/index.html?viewer=BVMap>
- NSW Rural Fire Service (2019). *Planning for Bushfire Protection. A Guide for Councils, Planners, Fire Authorities and Developers*. November 2019
- Orana Bush Fore Risk Management Committee (2020) *Orana Bush Fore Risk Management Plan*
- Standards Australia (2018). *AS3959, Construction of buildings in bushfire-prone areas*.

BUSHFIRE EMERGENCY AND EVACUATION PLAN

This plan has been designed to assist management in protecting life.
This plan outlines evacuation and site closure procedures to protect occupants from a bushfire threat.

The primary actions to follow are:

Evacuate early

Close on forecasted Catastrophic Fire Danger Rating days

Facility	Solar Farm
Facility type	Commercial - Utilities
Location	Lot 2/-/DP 1184528 9438 Mitchell Highway Cathundral NSW
Estimated occupancy	During Construction: During Operation:
Travel arrangements from the site	Private vehicles.
Chief Warden	
Deputy Warden	

EMERGENCY CONTACTS

In an emergency, call
000

Organisation	Location	Contact
NSW RFS – Nyngan	50 Lawlor St, Nyngan NSW 2825	000
NSW RFS – Dubbo	8 Judy Jakins Dr, Dubbo NSW 2830	02 6881 3900
Fire and Rescue NSW Trangie	20 Temoin St, Trangie NSW 2823 & 63 Dubbo St, Warren NSW 2824	02 5853 2365
NSW Police	59 Narromine St, Trangie NSW 2823 & 174 Dubbo St, Warren NSW 2824	02 6870 2370 & 02 6870 2380
NSW Ambulance	15 Dandaloo St, Narromine NSW 2821	000 02 9320 7777
Warren Shire Council	115 Dubbo St, Warren NSW 2824	02 6847 6600

SITE CLOSURES AND EARLY EVACUATION PROCEDURES – This plan recommends non-occupation on catastrophic fire weather days and leaving early in all circumstances.

Early evacuation procedure: Non-operational on days of forecasted catastrophic fire weather. If the site is operational in a bushfire event, relocate all site occupants to the emergency assembly areas and follow the advice of local emergency services.

If evacuation orders are issued, evacuate to the local safer places, evacuation centres or emergency care facilities as directed.

Emergency Assembly Area: Front Gate – West to Oxley Highway/ South to Mitchell Highway

Trigger to evacuate	Actions
An extreme or catastrophic fire danger rating is forecast for the next day. OR Fire 'Advice' Warning is likely to impact the site.	- The Chief Warden should consult the NSW RFS, check the NSW RFS website, call 1800 NSW RFS, or use smartphone applications and local firefighting resources for fire situations and updates; - The Chief Warden is to take control of the bushfire situation: Remain calm and explain to onsite personnel what is happening and the fire situation;

OR Fire' Watch and Act' Warning is likely to impact the site.	• The Chief Warden is to advise the local emergency service that the site is being evacuated as directed by the emergency services (including how many people and where they are going). • Ensure the Wardens and Site Manager have mobiles and are contactable. • Make arrangements for private transportation for evacuation.
OR When directed to do so by NSW Police or the NSW Rural Fire Service (RFS)	Off-site Evacuation • Arrange for onsite personnel to make their way to the designated Emergency Assembly Area; • Confirm all onsite personnel have been notified; • Make sure all onsite personnel have transportation for evacuation; • Arrange for suitable transportation to meet at the emergency assembly point for persons without transport, persons with compromised mobility and persons who require medical assistance; • Advise all onsite personnel with access to private transportation and do not require medical assistance to make their way to the designated Safer Place or Evacuation Centre as directed by the local emergency services. • Monitor the progress of the evacuation; • The Chief Warden is to advise the relevant emergency service that provided the evacuation orders when all persons have been evacuated; • Should the fire services arrive, the Chief Warden will hand control over to the officer in charge and provide an operational brief listing injured or vulnerable persons needing assistance.

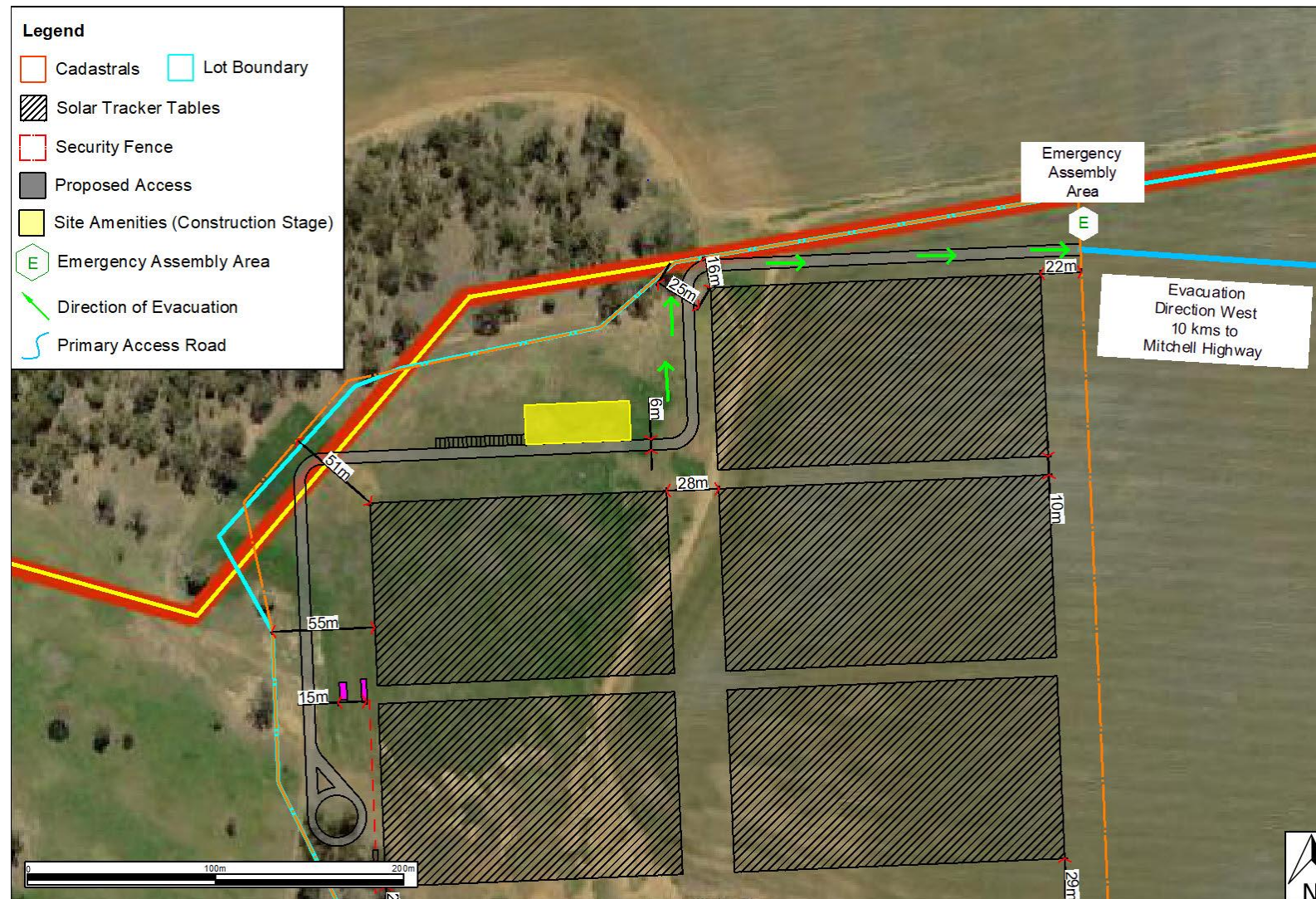
- | | |
|--|--|
| | <ul style="list-style-type: none">• Maintain situational awareness through radio, the NSW RFS website, 1800 NSW RFS, smartphone applications and local firefighting resources. |
|--|--|

THIS PLAN DOES NOT SUPPORT SHELTERING ONSITE.
The site should be closed on days of forecasted catastrophic fire weather.
All site occupants should leave early in all circumstances.

DAILY ACTIONS					
ACTIONS	Bush Fire Danger Ratings				
	NO RATINGS	MODERATE	HIGH	EXTREME	CATASTROPHIC
Chief Warden should Monitor the NSW RFS website and check the 'Fires Near Me' site or app.		By 1 pm	Minimum 1 pm and 3 pm	Monitor conditions every hour. Prepare to close the site.	Monitor conditions every hour. The site should be closed and non-operational on forecasted catastrophic fire weather days. The site is closed.
Fire is predicted to impact the site.	Monitor conditions every hour. Relocate all site occupants to the Emergency Assembly Area . Prepare for off-site evacuation. The site is closed.	Monitor conditions every hour. Relocate all site occupants to the Emergency Assembly Area . Prepare for off-site evacuation. The site is closed.	Monitor conditions every hour. Relocate all site occupants to the Emergency Assembly Area . Prepare for off-site evacuation. The site is closed.	Monitor conditions every hour. Relocate all site occupants to the Emergency Assembly Area . Prepare for off-site evacuation. The site is closed.	Monitor conditions every hour. The site should be closed and non-operational on forecasted catastrophic fire weather days. The site is closed.

The time to fire impact is less than the time required to evacuate.	Relocate all site occupants to the Emergency Assembly Area. Prepare for off-site evacuation. The site is closed.	Relocate all site occupants to the Emergency Assembly Area. Prepare for off-site evacuation. The site is closed.	Relocate all site occupants to the Emergency Assembly Area. Prepare for off-site evacuation. The site is closed.	Relocate all site occupants to the Emergency Assembly Area. Prepare for off-site evacuation. The site is closed.	The site should be closed and non-operational on forecasted catastrophic fire weather days.
After the bush fire event: The Chief Warden is to confirm with emergency services that the site is safe (utilities and buildings) and coordinate all clean-up, repair and maintenance as required to allow the site to return to normality. Where applicable, occupants affected by the event should be identified and provided with appropriate counselling and support.					

Figure 9 – Bush Management and Emergency Response Plan



Appendix i Hazard Matrix and Risk Register

The bushfire risk to people, property (assets), and the environment has been assessed in relation to the likelihood and consequence per the Australian Standard AS ISO 310000 *Risk Management Guidelines*.

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	High	High	Extreme	Extreme	Extreme
Likely	Medium	High	High	Extreme	Extreme
Possible	Low	Medium	High	Extreme	Extreme
Unlikely	Low	Low	Medium	High	Extreme
Rare	Low	Low	Medium	High	High

Risk Level	Risk Response
Extreme	High priority - unacceptable risk – Immediate action required Urgent site-specific mitigation and comprehensive management measures are required to reduce risk levels.
High	High priority - unacceptable risk – Immediate action required site-specific mitigation and comprehensive management measures are required to reduce risk levels.
Medium	Medium priority - Potentially unacceptable risk Site-specific mitigation and comprehensive management measures are required to reduce risk levels.
Low	Low priority - Acceptable risk Ongoing mitigation and management measures will ensure risk level remains low and risk is eliminated over time.

Risk Register – Construction and operation of the Moree Solar Farm Project					
Risk No#	Description	Risk Rating	Treatment	Residual Risk Rating	Responsible
1	Physical impact on persons or loss of life.	High	- Implementation of the bushfire management and protection measures detailed in sections 6 and 7. - Daily actions outlined in the Bushfire Emergency And Evacuation Plan	Medium	Site management EPC Fire Wardens Site Occupants
2	Fire impacting the subject site and assets.	Extreme	Implementation of the bushfire management and protection measures detailed in sections 6 and 7.	Medium	Site management EPC Fire Wardens
2	Fire propagation within the site and spreading from the site.	Extreme	- Implementation of the bushfire management and protection measures detailed in sections 6 and 7. - Follow the advice from emergency services.	Medium	Site management EPC Fire Wardens

Appendix ii Emergency Services Protocol

Table 1 outlines the roles and responsibilities of key personnel involved in a fire emergency during the proposed development's construction and operation phases

All personnel shall follow the corresponding Fire Emergency Protocols in **Table 2** below during or after a bushfire incident.

Table 1 – Roles and Responsibilities

Role	Responsibility
O&M Manager (Office based)	• TBC
HSE Officer (Site based)	• TBC
Trained First Aiders (Site based)	• TBC
First Responders	• TBC
Employees (Site based)	• TBC

Table 2 – Fire Emergency Protocol

Fire	
Project # and Title	Solar Farm 9439 Mitchell Highway, Cathundral NSW 2823
O&M Manager	During the incident:..... After the incident:.... ▪ Conduct safety meeting to discuss prevention measures and how to prevent hazard from reoccurring. ▪ Determine the cause of fire hazard ▪ Document file and records for ISO.
HSE Officer	During the incident:.. • Activate the emergency response plan. • Ensure all safety measures are being adhered to. • Monitor the situation and provide guidance on safety protocols. • Assist in the coordination of the evacuation if required. • Communicate with first responders and provide necessary support. After the incident:... ▪ Lead the investigation to determine the cause of the fire. ▪ Compile reports on the incident, response, and outcomes. ▪ Review and update safety procedures to prevent future incidents. ▪ Conduct training sessions to address any identified weaknesses in the response. ▪ Support affected employees and provide necessary resources for their recovery.
Employees	During the incident: Follow the emergency evacuation procedures. Assist in the safe evacuation of the site if it is safe to do so. Report to designated assembly points and await further instructions. Do not attempt to fight the fire unless trained and it is safe to do so. After the incident: ▪ Participate in debriefings and provide feedback on the incident and response. ▪ Follow any new safety protocols implemented as a result of the incident. ▪ Report any ongoing concerns or issues to the O&M Manager or HSE Officer. ▪ Support the recovery and rebuilding efforts as directed
First Responders	During the incident: Arrive at the scene and assess the situation. Establish a command post and communicate with the O&M Manager and HSE Officer. Conduct firefighting operations to control and extinguish the fire. Provide medical assistance to any injured personnel. Ensure the safety of all individuals on-site. After the incident: ▪ Conduct a review of the incident response. ▪ Provide feedback to the O&M Manager and HSE Officer on the effectiveness of the emergency response. ▪ Participate in debriefings and contribute to the investigation. ▪ Offer support and resources for recovery efforts

Trained First Aiders	During the incident: Provide immediate medical attention to any injured individuals. Assist in the evacuation of injured personnel if it is safe to do so. Communicate with first responders and provide information on the condition of injured persons. Maintain calm and provide reassurance to injured and affected individuals. After the incident: ▪ Participate in the debriefing sessions and provide feedback on the medical response. ▪ Restock and check first aid supplies and equipment. ▪ Support ongoing medical needs and monitor the recovery of injured personnel. ▪ Assist in the implementation of improved first aid procedures and training.
----------------------	--