Avonlie Solar Farm

Emergency Management Plan

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Version 1.1	03/2/2021	Brad Draper	Will Weir	Brad Draper	Construction
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Version 1.5	**04/02/2025**	**B. Hubatka**	**K.Olney** **S. Fazal**	**Shane Kelly**	**Operation**

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Acronyms and abbreviations

AC	Alternating current
Ancillary infrastructure	All project infrastructure with the exception of solar panels, including but not limited to collector substations, switching stations, permanent offices, battery storage and site compounds, electricity transmission lines and internal roads
APZ	Asset Protection Zone
BSF	Battery Storage Facility
BESS	Battery Energy Storage System
BFDP	Bushfire Danger Period
BFMC	Bushfire Management Committee
BoM	Bureau of Meteorology
CoC	Conditions of Consent
Decommissioning	The removal of solar panels and ancillary infrastructure and/or rehabilitation of the site
DPHI	(NSW) Department of Planning, Housing and Industry
ECO	Emergency Control Organisation
EMP	Emergency Management Plan
EMS	Environmental Management Strategy
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A	*Environmental Planning and Assessment 1979*
FFDI	Forest Fire Danger Index
HSE	Health Safety and Environment
HSSE	Health, Safety, Security and Environment
IPA	Inner Protection Area
kV	kilovolts
LEMC	Local Emergency Management Committee
MW	Megawatts
NCC	National Construction Code
NSW RFS	NSW Rural Fire Service
NSW	New South Wales

Operations	The operation of the development, but does not include commissioning, trials of equipment or the use of temporary facilities
PBP	Planning for Bushfire Protection 2019 (Guidelines)
PV	photovoltaics
RtS	Response to Submissions
SoC	Statement of Commitment(s)
SCRP	Soil Contamination Recovery Plan
SSD	Significant State Development
The proponent	Avonlie Solar Farm Pty Ltd
The Project	Avonlie Solar Farm

1. Introduction

1.1 Iberdrola Australia Overview

Iberdrola Australia Limited is 100% owned by Iberdrola Renovables Internacional, S.A.U. and is part of the Iberdrola Group.

Iberdrola is the world's largest producer of wind power by volume, and one of the world's largest electricity utilities by market capitalisation. They are globally recognised as sustainability leaders and share our deep commitment to the green energy transition. Iberdrola's global expertise includes renewable energy, networks, smart grids, large-scale energy storage, energy innovation and digitisation, and advanced customer products.

The Iberdrola Australia Operations team provides management and oversight of all Iberdrola Australia owned generation assets whilst in their operational and decommissioning phases.

1.2 Purpose and scope

Avonlie Solar Farm Pty Ltd (the proponent) received planning approval in 2019 for the construction and operation of a 254.1 megawatt (MW) alternating current (AC) photovoltaic (PV) solar farm.

The 581-hectare (ha) development site is freehold rural land located around 20km south of Narrandera. The Avonlie Solar Farm ('the Project') is a State Significant Development (SSD-9031) and represents an important contribution to renewable energy generation in New South Wales.

An emergency in relation to the Project is defined as a fire on site or in the vicinity of the site with potential to impact the site and surrounds. The purpose of the EMP is to identify fire risks and controls for the development and all procedures that will be implemented if a fire occurs on site or in the vicinity of the site. The EMP applies to the operational and decommissioning phases of the Project.

In particular, this EMP:

- Describes measures that will be implemented to ensure that the vegetated buffer achieves the objectives of conditions 25 and 26 (Schedule 3) of the consent.
- Includes a program to monitor and report on the effectiveness of these measures.
- Includes details of who will be responsible for monitoring, reviewing and implementing the plan, and timeframes for the completion of actions.

This EMP is applicable to all staff and sub-contractors associated with the Project. The EMP has been prepared in general accordance with Section 4 of the Department of Planning Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning, noting that the development is considered a "smaller facility", hence requiring a less detailed plan than more complex facilities.

1.3 The project

Avonlie Solar Project Co Pty Ltd (ACN 636 108 597) as overseen by Iberdrola Australia Limited (here on referred to as Iberdrola) is the Project Owner of the Avonlie Solar Farm ('the project'). The

project is to construct, operate and potentially decommission an approximately 245.47 Megawatt (MW DC) solar farm located approximately 20 kilometres (km) south of Narrandera, New South Wales (NSW). The solar farm was approved by the NSW Government in August 2019. Since the project approval, two modifications have also been determined for the project to address changes to the disturbance footprint, road/access intersection and battery storage system. The Consolidated Consent SSD 9031 includes all the modifications to the original determination instrument and associated Conditions of Approval.

Construction of the project is now complete, and Iberdrola currently manage the operation and maintenance activities of the solar farm. The solar farm consists of approximately 455,000 solar panels on approximately 581 hectares (ha) of land. As constructed operational assets include solar panels, substation, overhead transmission lines, above ground, and underground power cables, met stations, ring main units, transformers, DC combiner boxes, operations and maintenance buildings with associated car parking, internal access tracks, emergency lighting and other auxiliary equipment. The site location and layout is provided in Figure 1.

The SSD 9031 also approves the construction and operation of a battery storage system up to 100 MW / 100 MW hours, which may be implemented in the future in accordance with the Conditions of Approval.

The project is expected to operate for about 30 years, after which the project would be reconditioned or decommissioned. The solar farm will be monitored and operated remotely and requires a small number of maintenance personnel to be based at the site.

Operation activities include maintenance and cleaning of the solar arrays and combiner boxes and invertors, groundcover vegetation management, replacement of equipment and infrastructure, maintenance of landscaping and screening plantings, and pest, weed and animal control.

Daily operations and maintenance by site staff will be undertaken indicatively during standard working hours of:

- Monday to Friday: from 7 am to 6 pm
- Saturday: from 8 am to 1 pm

Night works or work on Sundays or public holidays would be avoided, except in the event of emergencies or major asset inspection or maintenance programs. During summer months, the photovoltaic (PV) panels would produce electricity prior to 7 am and after 6 pm. Tracker units would similarly operate outside standard hours in summer.

1.4 Project Phase

The phases of the Project are as follows:

- Preconstruction
- Construction
- Operations
- Decommissioning

The Project is now in the **Operations phase** of the project.

1.5 Agency submissions

Throughout the assessment of SSD-9031 and following the exhibition period of the Avonlie Solar Farm Environmental Impact Statement (EIS) assessed under Part 4 of the *Environment Planning and Assessment Act 1979* (EP&A Act), a Response to Submissions (RTS) report was prepared. Fire and Rescue NSW and the NSW RFS provided a response on the RTS, which is outlined below. The items identified in the RTS were included in an amended EIS and have been included in the Statement of Commitments (SoC) (refer Table 1).

1.5.1 Fire and Rescue NSW

Feedback received by Fire and Rescue NSW, following consideration of the RTS include:

It is understood that Avonlie Solar Farm Pty Ltd (the Applicant) has submitted a response to submissions and amendment letter in response to comments received as part of the Environmental Impact Statement (EIS) Exhibition. A supporting Amendment Report has been prepared to address these changes in addition to the Response to Submissions report.

It is noted that the Applicant has committed to preparing an Emergency Response Plan (ERP) and Fire Safety Study (FSS) as stated on page 43 of the report. FRNSW are satisfied that no further comments or recommendations are required to address the proposed changes.

A Fire Safety Study (FSS) will be prepared separately (at a later stage) in association with the BESS. The FSS will be prepared in consultation with Fire and Rescue NSW.

1.5.2 NSW Rural Fire Service

Feedback received by the NSW RFS, following consideration of the RTS include:

The subject land is not mapped bush fire prone land by Greater Hume Shire Council. However, it is noted that the land contains significant grassland vegetation formations. Further, the NSW RFS is the primary response agency for all structural fires on the land.

The NSW RFS recommends the following conditions be included in any approvals granted:

1. *A Fire Management Plan (FMP) shall be prepared in consultation with NSW RFS Southern Border Fire Control Centre. The FMP shall include:*
    - *24 hour emergency contact details including alternative telephone contact.*
    - *Site infrastructure plan.*
    - *Fire fighting water supply plan.*
    - *Site access and internal road plan.*
    - *Construction of Asset Protection Zones (APZ) and their continued maintenance.*
    - *Location of hazards (Physical, Chemical and Electrical) that will impact on fire fighting operations and procedures to manage identified hazards during fire fighting operations.*
    - *Such additional matters as required by the NSW RFS District Office (FMP review and updates).*

2. *The entire solar array development footprint to be managed as an Asset Protection Zone as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.*
3. *A 20,000 litre water supply (tank) fitted with a 65mm storz fitting shall be located adjoining the internal property access road within the required APZ.*
4. *To allow for emergency service personnel to undertake property protection activities, a 10 metre defendable space (APZ) that permits unobstructed vehicle access is to be provided around the perimeter of each of the solar array development sites including associated infrastructure.*

The items raised above are addressed throughout this document.

1.6 Consultation

1.6.1 Fire and Rescue NSW

The draft EMP was supplied to Fire and Rescue NSW in November 2023. Feedback indicated that the plan was acceptable and no further amendments were required.

Feedback can be found in Appendix B.

1.6.2 NSW Rural Fire Service

The draft EMP was supplied to RFS NSW in August 2023. Feedback indicated that the plan was acceptable and no further amendments were required.

Feedback can be found in Appendix B.

2. Planning

2.1 Legislative and other fire management requirements

2.1.1 Legislation, guidelines and standards

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

- The *Rural Fires Act 1997 (amended 2000)*.
- NSW Rural Fire Service Guideline Planning for Bush fire Protection (PBP) 2019 (NSW RFS, 2019).
- NSW Rural Fire Service: A guide to developing a Bush Fire Emergency Management and Evacuation Plan (NSW RFS 2014).
- NSW Department of Planning: Hazardous Industry Planning Advisory Paper No 1, Emergency Planning (January 2011).
- AS 1940-2017: The storage and handling of flammable and combustible liquids.
- AS 4777.1:2016: Grid Connection of Energy Systems via Inverters.
- AS 3959 – 2018: Construction of buildings in bushfire-prone areas.
- National Construction Code (NCC).
- ISSC 3 Guideline for Managing Vegetation Near Power Lines.

2.2 Objectives and targets

2.2.1 Objectives

The key objective of the EMP is to identify the fire risks and controls associated with the Project and identify procedures that are to be implemented in case of a fire on site or in the vicinity of the site. Specific objectives include:

- Secure the health, safety and welfare of all personnel on site.
- Contain an emergency.
- Protect property, plant, equipment and the environment.
- Manage the recovery and resumption of normal operations.

To achieve this objective, the proponent will:

- Ensure appropriate controls and procedures are implemented during operations to minimise fire risks.
- Ensure appropriate measures are implemented to address the mitigation measures detailed in the EIS, RTS and CoC.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 2.1 of this EMP.

2.2.2 Targets

The following targets have been established for the management of fire risks and impacts during operation and decommissioning of the Project:

- Ensure full compliance with the relevant legislative requirements.
- Ensure full compliance with relevant requirements of the EIS, RTS and CoC.

2.3 Conditions of consent

CoC and SoCs are detailed below in Table 1. Conditions 25 of the CoC identifies requirements for operating conditions, including those relating to fire risks. Condition 26 of the CoC requires preparation of an EMP prior to the commencement of construction. The SoCs derive from the EIS; this EMP includes fire related commitments, as identified in Table 1 below.

This EMP meets these requirements.

Table 1 Conditions of consent and statements of commitment

Item#	CoC/SoC description	Where addressed
Conditions of consent		
25	The Applicant must:	
	a) minimise the fire risks of the development, including managing vegetation fuel loads on-site;	Section 3.3 Section 3.3.6
	b) ensure that the development: • includes at least a 10 metre defendable space around the perimeter of the solar array area and battery storage areas that permits unobstructed vehicle access. • manages the defendable space and solar array areas as an Asset Protection Zone. • complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2006 (or equivalent) and Standards for Asset Protection Zones. • is suitably equipped to respond to any fires on site including provision of a 20,000 litre water supply tank fitted with a 65mm Storz and a FRNSW compatible fitting located adjacent to the internal access road.	Project design Section 3.3 Section 3.3.6
	c) assist the RFS and emergency services as much as practicable if there is a fire in the vicinity of the site; and	Section 4.1, and 0
	d) notify the relevant local emergency management committee following construction of the development, and prior to commencing operations.	Section 4.1
	Prior to commencing construction, the Applicant must develop and implement a	This EMP

Item#	CoC/SoC description	Where addressed
26	comprehensive Emergency Plan and detailed emergency procedures for the development, to the satisfaction of FRNSW and the RFS. The Applicant must keep two copies of the plan on-site in a prominent position adjacent to the site entry points at all times. The plan must:	
	a) be consistent with the Department's Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning' and RFS's Planning for Bushfire Protection 2019 (or equivalent).	This EMP
	b) identify the fire risks and hazards and detailed measures for the development to prevent or mitigate fires igniting.	Section 3.2, and Section 3.3
	c) list work that should not be carried out during a total fire ban;	Section 3.3.6
	d) include availability of fire suppression equipment access and water.	Section 3.3.6
	e) include procedures for the storage and maintenance of any flammable materials.	Section 3.3.6
	f) detail access provisions for emergency vehicles and contact details for both a primary and alternative site contact who may be reached 24/7 in the event of an emergency.	Section 4.1, and Section 4.4
	g) include a figure showing site infrastructure, Asset Protection Zone, and the fire-fighting water supply tank.	Figure 1 Figure E-1
	h) include location of hazards (physical, chemical, and electrical) that may impact on fire-fighting operations and procedures to manage identified hazards during fire-fighting operations.	Figure E-1
	i) include details of the location, management and maintenance of the Asset Protection Zone and who is responsible for the maintenance and management of the Asset Protection Zone.	Section 3.3.6
	j) include bushfire emergency management planning; and	This EMP
	k) include details of the how RFS would be notified, and procedures that would be implemented, in the event that: • there is a fire on-site or in the vicinity of the site; • there are any activities on site that would have the potential to ignite surrounding vegetation; or • there are any proposed activities to be carried out during a bushfire danger period.	0 and 0
Statement of Commitments		
HA1	An Emergency Response Plan, incorporating an Evacuation Plan and Spill and Contamination Response Plan would be developed prior to commissioning the	This EMP

Item#	CoC/SoC description	Where addressed
	solar farm. A copy of the plan would be kept on site in a prominent position adjacent to the site entry point at all times.	
HA2	Dangerous or hazardous materials would be transported, stored and handled in accordance with AS1940-2004: The storage and handling of flammable and combustible liquids, and the ADG Code where relevant. All potential pollutants kept on-site would be stored in accordance with relevant HAZMAT requirements and bunded.	Section 3.3.6
HA7	A Bush Fire Management Plan would be developed and implemented during construction, operation and decommissioning, with input from the RFS, and include but not be limited to: • Management of activities with a risk of fire ignition. • Management of fuel loads onsite. • Storage and maintenance of firefighting equipment, including siting and provision of adequate water supplies for bush fire suppression. • The below requirements of Planning for Bush Fire Protection 2006: o Identifying asset protection zones. o Providing adequate egress/access to the site. o Emergency evacuation measures. Operational procedures relating to mitigation and suppression of bush fire relevant to the solar farm.	This EMP
HA8	A comprehensive Emergency Fire Response Plan would be developed and implemented during construction, operation and decommissioning, and include but not limited to: • Address foreseeable on-site and off-site fire events. • Details appropriate risk control measures that would need to be implemented to safely mitigate potential risk to the health and safety of firefighters and other first responders. Other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site.	This EMP

3. Hazards

3.1 Existing environment

The Project is within the area of operation of the Riverina Murray LEMC. A Local Emergency Management Plan (EMPLAN) was established for the local government area (NSW Government) in 2019.

The Bushfire Danger Period (BFDP) generally runs from November to March, however it may vary with local conditions (Hume BFMP). The Hume Zone has highly seasonal weather pattern has a temperate climate. The average summer maximum temperature is about 31.1°C with a minimum of 15.7°C. The average winter maximum is 14.0°C with a minimum of 3.4°C. The mean annual rainfall is 609.9 mm (BoM, 2021). Rainfall is relatively evenly spread throughout the year with winter and spring months showing a slight predominance in statistics (LEMC).

The Hume BFMC area has on average 50 fires per year, of which typically very few are considered major fires. The main sources of ignition in the Hume BFMC area are escapes from legal burning off, lightning and equipment use.

The Hume BFMC area is located in the south of New South Wales and includes the Local Government Areas (LGAs) of Albury City and Greater Hume Shire. The Riverina Murray Zone Rural Fire Service (RFS) team has a number of rural fire brigades in addition to Fire and Rescue NSW brigades in the locality including North Albury, Albury Central, Albury Civic, Henty, Holbrook and Culcairn.

The Project site is currently used for grazing and agricultural purposes; therefore, understorey bushfire fuel loads vary from season to season. The primary existing bushfire hazard of site is the planted rows of trees along several paddock fence lines, adjacent grazing land, within the Project area.

Existing transmission lines runs throughout the site (refer to Figure 1).

There are multiple associated residences located nearby to the site, however none are located within the Project site. There are no non-associated sensitive receptors located near the Project site.

No areas of the Project site are identified as Bushfire prone land in the Greater Hume bushfire prone land map (NSW RFS 2011). Minor existing bushfire hazards within the development site are:

- Native derived and exotic grassland.
- Narrow strips of vegetation that run along existing paddock fence lines.
- Scattered remnant paddock trees.
- Remnant patches of woodland vegetation.

The development site is situated within the Murray Catchment and the river is located 13km to the north of the development site. Two (2) farm dams located within the Project site will be retained. The indicative Project layout is provided in below.

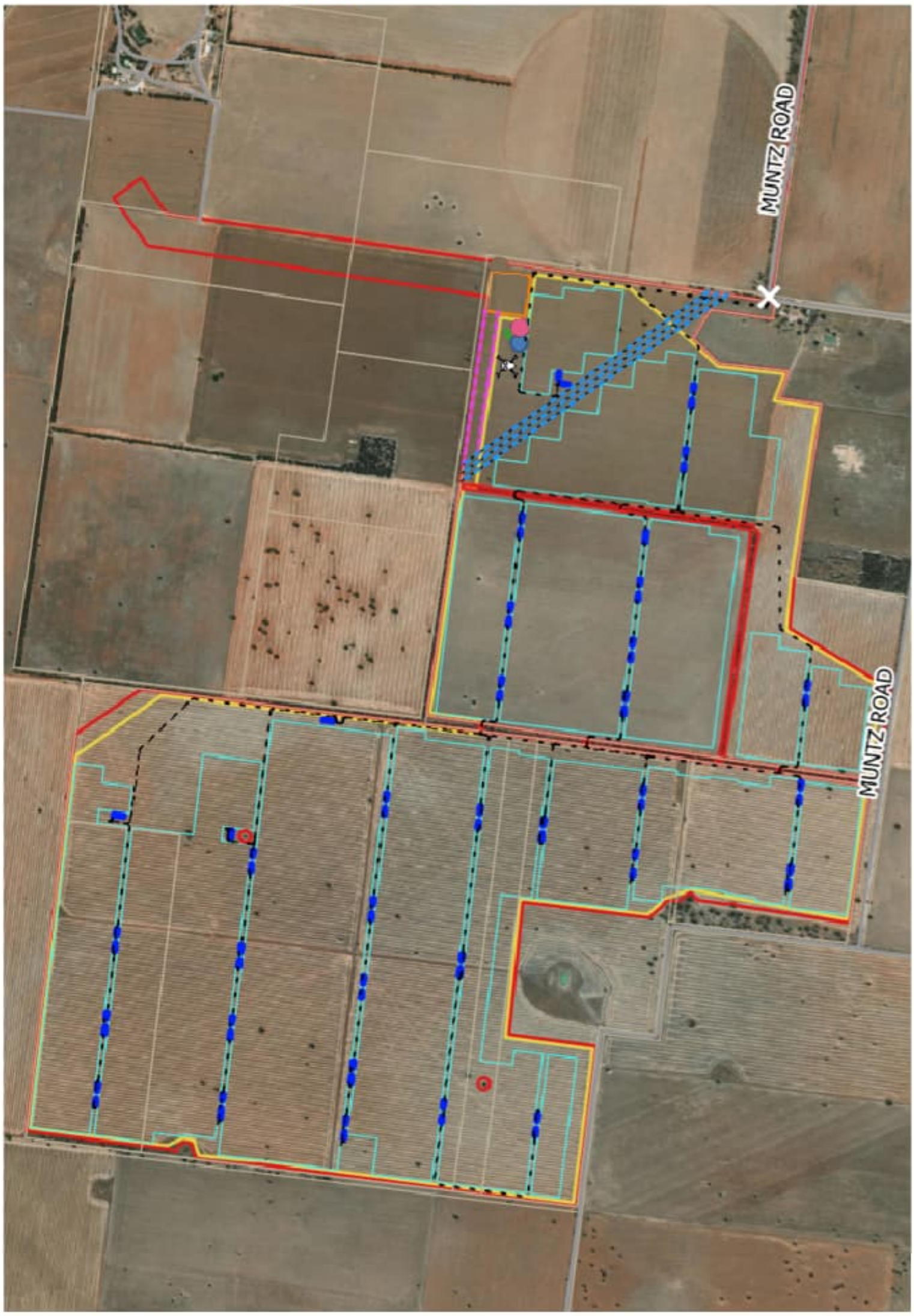

Figure 1. Site infrastructure plan

3.2 Identification of fire risks

Potential risks of fire at the site include:

- Bushfire and structural fire risk.
- Operational maintenance activities i.e., hot works, mowing, use of combustible materials.
- Battery Energy Storage System (not part of current site but may be developed in future).

3.2.1 Bushfire and structural fire risk

Potential bushfire (including grass fire) hazards relate to the risk of the Project causing a bushfire and impacting adjoining landowners or the risk of external bushfires affecting the solar farm. This could include:

- Poor maintenance of APZ or internal roads.
- Insufficient fire controls on site.
- Insufficient management of groundcover and fuel loads.
- Insufficient firefighting resources on site.
- Failure to coordinate with and monitor the local RFS.
- Lightning strikes and ember attack.

3.2.2 Operational maintenance activities

Operational maintenance hazards relate to the risk of the Project activities causing a fire. This could include:

- Hot works activities such as welding, soldering, grinding and use of a blow torch.
- Sparks and contact ignition from vehicles in long combustible vegetation.
- Smoking and careless disposal of cigarettes.
- Use of petrol-powered tools and equipment.
- Operating plant fitted with power hydraulics on land containing combustible material.
- Electrical faults during operation.
- Storage of chemicals and hazardous materials.

3.3 Fire risk controls and measures

3.3.1 Materials and maintenance

All electrical components will be designed and managed to minimise potential for ignition. The solar array, which will occupy the majority of the site, will be largely constructed of glass, silicon, steel and aluminium/steel and will have very low flammability. The site office and staff amenity building is incorporated into the solar farm, adjacent the substation area, located in the south-eastern corner of the development site.

A Sign in/Sign out register is kept on site in the O&M Building.

3.3.2 Hot works

The following control measures must be implemented to mitigate the risk of fire during hot work activities:

- The Avonlie Solar Farm “Hot Works Permit” will be filled in and approved prior to any hot works (0)
- A designated fire watch observer will be present during hot work activities. A fire watch observer should be alert for any fire outbreak or hazards, take immediate action to combat any fire outbreak.
- A fire watch observer should not allow hot work to occur outside of designated areas, immediately stop work if a hazardous condition is observed and be aware of the location of the nearest fire extinguisher.
- All combustible materials must be removed or safeguarded (i.e., isolated).
- A suitable fire extinguisher must be located within 10m of the hot work being carried out.
- Signs must be erected at all access points to where hot work is being performed.
- A 1500L fire water trailer will be located within 10m while conducting hot works during the bush fire danger period.
- Hot work should not, as a normal course of business, occur during a Total Fire Ban. Where essential hot work needs to occur during a Total Fire Ban, a formal exemption must be obtained from the NSW RFS.

3.3.3 Operating plant on land containing combustible material

The following control measures must be implemented during extreme or catastrophic fire danger ratings to mitigate the risk of fire during earthwork activities:

- Consideration is given to separating combustible material (i.e., dry grass, bushland) from operating plant through the creation of fire breaks or pre-stripping work areas during favourable weather conditions; where permissible and practicable.
- Where combustible material and an ignition source cannot be separated, and an activity could start a fire, ensure:
  - The combustible material is saturated or doused with water prior to activities commencing.
  - Placement of hot material (such as cut steel) onto a stripped area and separated from combustible material.
  - A fire watch (i.e., spotter) is ready to respond to extinguish a fire should it start.
  - A suitable water source is close by and accessible to use in response to a fire.
- On days of “Total Fire Ban” or “Harvest Ban”, hot work, trenching and land clearing with machinery must cease: Unless approval has been obtained from the NSW RFS. Hot work, trenching and land clearing with machinery must not recommence until the Total Fire Ban or Harvest Ban is lifted.

All mobile plant and machinery must be serviced as recommended by manufacturers. Unless risk assessed or the driver is in proximity, machinery and mobile plant must be switched off when unattended.

Any mobile plant used for excavation, trenching, or a similar tractor, must be:

- Free from faults and mechanical defects which could cause a fire.
- Fitted with a properly maintained spark arrestor which complies with AS1019:2000 Internal combustion engines – spark emission control devices unless fitted with a turbocharger or an exhaust aspirated air cleaner.
- Be diesel or battery fuelled.

3.3.4 Shutdown procedure

In the event of an emergency, all power generating equipment/mobile generators will be shut down, as far as reasonably practicable, prior to evacuating the site.

Instructions below are extracted from the Avonlie Solar Farm Operations and Maintenance Manual.

5.6 SHUTDOWN PROCEDURES

5.6.1 SHUTDOWN OF AVONLIE SF

- Contact TransGrid control room, AEMO, CQ and the Asset Manager (see Table 2 for contact details) to inform them that the park will be shut down. 8legs will also need to be updated regarding inverter availability over specific shutdown period.
- Reduce park total generation to the minimum possible by setting set-point 0MW through the SCADA interface. The system will ramp-down generation in a controlled manner following the ramp rate set in the SCADA system.
- After all inverters have reduced generation to the lowest possible steady level, send 'STOP' commands to all inverters through the SCADA interface.
- Carry out any isolations required for the work or procedure underway.

Table 2: Emergency Contacts

Contact Name	Contact Details
Police, Fire or Ambulance	000 or for Mobiles Only 112
Narrandera Police Station	02 6959 5999
Narrandera Medical Centre	02 6958 1000
Narrandera District Hospital	02 6951 0200
Fire and Rescue NSW Narrandera Fire Station	02 6959 1380
NSW Bush Fire Information Line	1800 679 737
Poison Information	13 11 26

Table 3: Operations Contacts

Contact Name	Contact Details
TransGrid	Systems Operator 02 8818 0621 System.operator@TransGrid.com.au
AEMO Control Room	02 8884 5219
Pollution incidents	NSW EPA 131 555
Safety incidents (notifiable)	SafeWork NSW 13 10 50
Heritage (Aboriginal or European)	NSW Office of Environment and Heritage (02) 6883 5330
Native vegetation, pests, and weeds	NSW Department of Primary Industries (02) 9338 6666

Fire Wardens will ensure all access to site and 20,000L water tank are maintained especially prior to site evacuation.

The Chief Warden will be responsible for carrying out communications with emergency services throughout the event.

3.3.5 Smoking

A designated smoking area is established adjacent to the O&M office located away from any combustible material and is equipped with an appropriate cigarette bin.

3.3.6 Bush fire protection guidelines

In accordance with the PBP Guidelines, the Project could be afforded an acceptable level of protection from bushfires, through a combination of strategies which:

- Minimise the impact of radiant heat and direct flame contact by separating the development from the bushfire hazard.
- Reduce the rate of heat output (intensity) of a bushfire close to a development through control of fuel levels.
- Minimise the vulnerability of buildings to ignition from radiation and ember attack.
- Enable relatively safe access for the public and facilitate fire-fighting operations.
- Provide adequate water supplies for bush fire suppression operations.
- Facilitate the maintenance of APZs, fire trails, access for firefighting and on-site equipment for fire suppression.

The PBP Guidelines provide six key bushfire protection measures for developments:

1. The provision of clear separation of buildings and bush fire hazards, in the form of fuel reduced APZ (comprising inner and outer protection areas and defendable space).
2. Appropriate access standards for residents, fire fighters, emergency service workers and those involved in evacuation.
3. Construction standards and design.
4. Adequate water supply and pressure.
5. Suitable landscaping, to limit fire spreading to a building or asset.
6. Emergency management arrangements for fire protection and/or evacuation.

The following sections of the EMP outline how these six key bushfire protection measures will be addressed for the Project.

3.3.6.1 Asset protection zones

Asset Protection Zones (APZs) are provided in accordance with Appendix 4 of PBP and the NSW RFS' guideline Standards for Asset Protection Zones (NSW RFS, 2005).

Schedule 3, Condition 25 (b) of the CoC states that during operation:

The Applicant must:

(b) Ensure that the development:

- *includes at least a 10 metre defendable space around the perimeter of the solar array area and battery storage areas that permits unobstructed vehicle access;*
- *manages the defendable space and solar array areas as an Asset Protection Zone.*
- *complies with the relevant asset protection requirements in the RFS's Planning for Bushfire Protection 2006 (or equivalent) and Standards for Asset Protection Zones.*

An APZ with a minimum width of 10m are provided around the solar farm buildings, BESS and around the outside perimeter of the solar array. The 10m APZ are applied to any retained woody vegetation and landscape plantings and around the perimeter of the solar farm. In addition, unencumbered access will be provided to the defendable space. All APZs will be managed as an inner protection area (IPA).

The APZ surrounding the inverter stations and BESS are constructed and maintained as a gravel surface to minimise the risk of fire escaping from the facilities and the risk of external fire affecting the facilities.

Vegetation located under the solar array footprint is managed to the specifications of an APZ.

3.3.6.2 Fuel hazard management

According to the PBP guidelines, the APZ should provide a tree canopy cover of less than 15% located greater than 2m from any part of the roofline of a building (or in this case solar infrastructure). Trees should have lower limbs removed up to a height of 2m above the ground. The understorey should be managed (mowed or grazed) to treat all shrubs and grasses on an annual basis in advance of the fire season.

Grass height within the APZ will be maintained at or below 100mm throughout the November to March bushfire season. Where trees or shrubs are present within established APZ for the solar farm or within the solar array area, they will be maintained in accordance with PBP guidelines.

Grassland fuel hazard is a function of grass height and cover, with variation according to curing and species fuel characteristics. Grass height outside the APZ, including beneath the solar array, will be maintained at or below 150mm throughout the fire season.

Avonlie Solar Farm will ensure the APZ is maintained to meet the specifications of the NSW RFS' guidelines.

Vegetation below the overhead powerlines at the site will be managed by trimming to ensure clearances to minimise potential ignition risks, in accordance with the ISSC 3 *Guideline for Managing Vegetation Near Power Lines.*

3.3.6.3 Storage of hazardous and flammable materials

All chemicals and dangerous goods held onsite will be stored in a bunded, ventilated, labelled, lockable storage shed/container near the O&M building, adjacent to the substation. Extinguishers will be provided in the storage shed/container. Landowners and/or contractors may temporarily store small volumes <20L of fuel/chemicals on subcontractor vehicles during works. Individual containers of undiluted chemicals (20L) for vegetation management will be located in the storage shed on bunded pallets.

Chemicals and fuels will be kept in a hazardous storage cabinet on site in the storage shed. The cabinet has an internal bund to capture any leaks. Items stored in the hazardous storage cabinet will comprise, but are not limited to spray paint cans, touch up paints, and oils/grease for machines, methylated spirits and Loctite. A spill kit will be held and maintained adjacent to the storage area.

Batteries for tools and vehicles (light/all-terrain vehicles) and equipment spare parts such as trackers will also be stored in the storage shed.

3.3.6.4 Flammable and hazardous materials and decontamination procedure

Flammable liquids and/or hazardous materials shall be appropriately stored on site to the specifications of the manufacturer's requirements, and a hazardous chemical register maintained. A Safety Data Sheet (SDS) will be readily available for each product. Storage of flammable liquids will be in accordance with AS1940: Flammable Liquids Storage and Handling.

A fire in the storage facility may present a chemical hazard depending on the materials being stored therein.

Substations shall be bunded to contain 110% of any hazardous fluids in the event of a major leak or fire. Regular inspections of the bunded area shall occur. In the event of an incident, where hazardous materials may be present, Fire & Rescue NSW, the lead agency for hazardous materials incidents will attend once the incident is reported.

A fire in the substation or inverter stations will potential present chemical hazards from the transformer fluid.

In the event of significant contamination, the affected area will be barricaded, and personnel removed from the vicinity. Emergency services will be contacted to provide assistance and a handover given by the Chief Warden where necessary.

As identified in 0, the Chief Warden and the Area Warden are responsible for shutting down plant and/or equipment as necessary and if it is deemed safe to do so.

Decontamination will be implemented as soon as practicable.

Sources of chemical contamination at the site and decontamination actions are detailed in Table 2 below.

Table 2. Contamination sources and corrective actions

Chemical	Source	Cause	Consequence	Decontamination
Petrol and diesel	Vehicles, machinery, generators	Mechanical failure Human error during transfer	Fire (if ignited) Injury/fatality Soil/surface water/groundwater contamination	Defendable boundary for firefighting will be established. Use appropriate personal protective equipment (PPE). Spill clean-up using absorbent material. Excavation of contaminated soil and disposal at a licensed waste disposal facility.
Lubricants and oils	Machinery	Human error during transfer	Injury/fatality Soil/surface water/groundwater contamination	Use appropriate PPE. Spill clean-up using absorbent material. Excavation of contaminated soil and disposal at a licensed waste disposal facility.
Pesticides	Machinery	Mechanical failure Human error during transfer	Injury/fatality Soil/surface water/groundwater contamination	Use appropriate PPE. Spill clean-up using absorbent material. Excavation of contaminated soil and disposal at a licensed waste disposal facility.
Solar panels	Solar panels are not deemed a potentially hazardous industry under the State Environmental Planning Policy No 33—Hazardous and Offensive Development (1992 EPI 129).			

In the event of contamination, the affected area will be cordoned off with yellow tape printed with the message “Caution Chemical Hazard”. Incidents will be reported to the NSW RFS District Office immediately. Decontamination actions will be implemented as soon as practicable.

3.3.6.5 Firefighting resources and preparedness

Fire danger warning signs will be located at the entrance to the site compound.

Part of Condition 25 (b) of Schedule 3 states that during operation:

The Applicant must:

(b) Ensure that the development:

- *is suitably equipped to respond to any fires on site including provision of a 20,000 litre water supply tank fitted with a 65mm Storz fitting and a FRNSW compatible suction connection located adjacent to an internal access road.*

Water supply

A 20,000L steel water storage tank is installed adjoining the internal access roads near the O&M Building for firefighting and other non-potable water uses. The water level in the tank will be maintained at full capacity at all times and checked monthly. Static water supply location is identified in Figure 1.

Water supply requirements shall comply with PBP, which include, but is not limited to the following specifications.

- A connection for firefighting purposes is located within the Inner Protection Area (IPA) or non-hazard side and away from the structure; 65mm Storz outlet with a ball valve is fitted to the outlet.
- Ball valve and pipes are adequate for water flow and are metal.
- A Fire and Rescue NSW compatible fitting/outlet will also be provided.
- Supply pipes from tank to ball valve have the same bore size to ensure flow volume.
- A hardened ground surface for truck access is supplied within 4m.
- Above-ground tanks are manufactured from concrete or metal.
- Unobstructed access can be provided at all times.

Rainwater tanks installed beside site buildings will also include a 65mm Storz fitting and a Fire and Rescue NSW compatible fitting/outlet. Tanks will be made of non-combustible materials (steel or concrete).

Other Fire Fighting Equipment

Additional equipment on site will include one 1,500L skid mount water tank and pump with appropriate firefighting fittings retained on site on a precautionary basis, particularly during any cutting and welding operations. The water pump will be tested monthly throughout the BFDP and moved around site on a car trailer where needed.

Fire extinguishers will be located in each vehicle on site, fuel/chemical storage facilities and the site office. Equipment lists will be detailed in Work Method Statements.

Installation and regular testing will be undertaken by fire safety and testing services.

Access

Safe and efficient access (suitable for firefighting appliances) will be established and maintained over the solar farm site. The APZ and defendable space around the perimeter of the site will be suitable for Category 1 Firefighting Vehicles; these require a trafficable surface with a width of 4m with any curves having a minimum inner turning radius of 6m. The perimeter track will comply with the relevant requirements of Appendix 3 of the PBP guidelines and the NSW RFS Fire Trail Standards (2016), including:

- A minimum carriageway width of 4m with an additional 1m wide strip on each side of the trail clear of bushes and long grass.
- A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches.
- Capacity for passing using reversing bays and/or passing bays every 200m suitable for fire tankers.
- There is suitable access for a Category 1 fire appliance to within 4m of the static water supply.
- The crossfall is not more than 10 degrees.

Utilities

Electricity service connections, where provided in support of operational phases, shall comply with the PBP. Where practicable, electrical transmission lines for buildings will be via underground methods.

Other measures

Suitable fire extinguishers and PPE will be maintained at site buildings. This will include protective clothing and respiratory protection (P2 mask or similar) for the maximum number of staff on site at any period.

Fuel presents the main source of potential contamination onsite. Spill kits will be stationed at relevant areas across the site, including the site office.

Documentation of all firefighting resources will be maintained at the site, including an inspection and maintenance schedule.

The local RFS and Fire and Rescue brigades will be periodically invited to an information and orientation day covering access, infrastructure, firefighting resources on-site, fire control strategies and risks/hazards at the site. The preparedness of local RFS and Fire and Rescue brigades will be enhanced through site orientation and information events.

The NSW RFS and Fire and Rescue will be provided with a contact point for the solar farm, each time this EMP is reviewed and updated. As a minimum, this will be at the commencement of construction, on commissioning the operational solar farm and just prior to decommissioning.

Figure E-1 identifies the location of emergency equipment on site. Figure E-2 and

Figure 0-1 identifies the location of muster points in the case of emergency evacuation during operations.

3.3.6.6 Equipment management

Machinery capable of causing an ignition (refer Section 3.3.2) will not be used during bushfire danger weather, including Total Fire Ban days.

A hot works permit system will be applied to ensure that adequate safety measures are in place. Fire extinguishers and a water cart must be present during all hot works. Where possible hot works will be carried out in specific safe areas (such as the site workshop). Where hot work, or any work that has the potential to ignite surrounding vegetation is to be undertaken, the RFS will be notified of the activity.

As identified in 0, the Chief Warden and the Area Warden are responsible for shutting down the plant and/or equipment as necessary and if it is deemed safe to do so.

4. Implementation and operation

4.1 Structure and responsibility

Prior to operation, the proponent will provide this EMP will be supplied to the relevant LEMC, the Greater Hume LEMC and the NSW Rural Fire Service and Fire and Rescue NSW.

4.1.1 Emergency Management Team

The roles relevant to this EMP and their responsibilities are detailed in Table 3. Specific roles and responsibilities during an emergency event are detailed in Appendix A.1.

Table 3 - EMP roles and responsibilities

Role	Responsibility
Site Manager	• Ensure that the EMP is developed, implemented, reviewed and approved. • Ensure that the hazard identification and risk management activities include emergency situations. • Ensure that the emergency control organisation is established and maintains the requirements associated with this EMP. • Ensure that emergency equipment inspections are completed as per requirements. • Plan and facilitate/organise emergency evacuation trials. • Plan and arrange training for Emergency Wardens as required. • Coordinate Emergency Team meetings. • Ensure the Site Emergency Procedure is up to date and communicated adequately to all site personnel. • Report emergencies as per Incident Management Procedure • Monitor changes in the work environment which may require the EMP to be updated.
Health, Quality, Health, Safety and Environment Manager (QHSE)	• Participate in Emergency Committee meetings. • Liaise with Chief Emergency Warden and assist as required. • Provide advice to the LEMC as required. • Monitor changes in the work environment which may require the EMP to be updated. • Ensure that hazard identification and risk assessment activities include emergency situations. • Ensure the EMP is in compliance with AS3745 Planning for Emergencies in Facilities.
Chief Warden	• The Chief Wardens' primary responsibility is to respond and co-ordinate the Emergency Control Organisation (ECO) in managing any emergency event until Emergency Services arrive. • Communicate with landowners as appropriate/relevant.

Head Count Warden	• During an emergency evacuation collect the visitors register and sign on sheets and conduct a head count at the muster point. • Report head count status to the Chief Warden. “All persons accounted for” or “persons unaccounted for” giving details of missing persons.
ECO	• Undertake training and familiarisation required to fulfil allocated role in the event of an emergency. • Fulfil specified duties in the event of an emergency, or an emergency drill.
Emergency Committee	• Develop and maintain EMP and procedures. • Allocate ECO roles. • Arrange training and drills in accordance with EMP requirements. • Meet to discuss EMP and requirements as regularly as is deemed necessary, particularly in light of changes to site, activities or key personnel. • Ensure all records associated with emergency activities are made available and kept in the specified records management system. • Monitor changes in the work environment which may require the EMP to be updated.
Emergency Services	• The role of Emergency Services is to provide the supporting resources to assist in the management of the emergency.
All Staff and Contractors	• Perform all duties in a manner which will ensure their own and others’ safety. • Comply with the responsibilities assigned under relevant legislation. • Comply with all site safety rules and procedures. • Remain alert at all times to potential fire hazards. • Participate in the identification and elimination of hazards. • Immediately report any dangerous occurrence, injury, hazard or defective equipment. • Maintain knowledge of how to implement safe work practices using the hazard identification, risk assessment and risk control techniques. • Maintain knowledge of emergency response procedures, including evacuation protocols and bushfire action statements. • Actively participating in safety meetings and programs, including training. • Actively participating in rehabilitation programs.

It is noted that individual personnel may perform multiple roles.

4.2 Training, awareness and competence

All site personnel including sub-contractors will be instructed of the correct response to an occurrence, or emergency evacuation in accordance with the various procedures outlined in the appendices to this EMP, in particular:

- Emergency contacts.
- Emergency Response Diagram.
- Emergency Evacuation Protocol.
- Bushfire Action Statement.
- Emergency Services Contact Instruction.

An evacuation drill will be undertaken annually prior to the bushfire season to ensure understanding of roles and procedures.

4.2.1 Health, Safety and Environment induction

All employees, contractors and staff working on site will undergo induction training covering all procedures and protocols included in this EMP. The site induction provides an introduction to fire risks and preventative controls as well as emergency procedures.

4.2.2 Pre-start meetings

Staff and contractors will attend pre-commencement meetings at the beginning of significant maintenance work, which will include, but not be limited to:

- Daily fire risk rating and predicted weather, including heat index, maximum predicted temperature and wind speeds.
- Recent fire events on or in the vicinity of the site.
- Specific fire risks relevant to the day's activities.

4.3 Emergency communication

Radio and/or mobile telephone communications will be the main means of communications in the event of an emergency. Communications protocols for the use of mobile phones, radio (type, channels and call-signs) have been established and are detailed in the site induction.

During an emergency, personnel in the facility are alerted by the call "Emergency, Emergency, Emergency" via radio on the emergency channel.

The Chief Warden will contact emergency services where necessary.

The Chief Warden shall be in control of radio communications during an emergency. In the event of an emergency, persons not involved in the emergency shall maintain radio silence so as to allow radio communications between the Chief Warden and other services/ personnel involved in the emergency to flow uninterrupted.

4.4 Site access for emergency services

Local emergency services, including the LEMC, have been consulted to establish the best method of ensuring access. Security measures for the site will ensure local emergency services are able to access the site during operational hours as outlined in the Appendix D - Bushfire Action Statement.

4.5 Termination of emergency

Where emergency service response is required to respond to a fire the Chief Warden will hand control to the emergency services controller and provide relevant information and support as required.

The Chief Warden will maintain communication with emergency services to determine when an emergency can be deemed to be in control and no longer active. At this point the Chief Warden can have control of the facility returned at the emergency services controller discretion. The Chief Warden can declare the emergency over and inform worker and other relevant stakeholders.

5. Measurement and evaluation

5.1 System monitoring and maintenance

Table 4 - Audit summary table

No.	Audit	Requirement	Timing	Responsibility
1	Internal review	Audits will be planned, carried out and reported to provide assessment of the Plan.	Regular reviews are conducted to assess the performance of the plan. These are executed in Safety Culture and documented in Sharepoint. More frequent auditing may occur if environmental checks indicate major deficiencies with environmental management of the site.	Site Manager
2	Independent environmental audit (Conditions 7 and 7C - 7D of Schedule 4, CoC)	The Applicant must commission and pay the full cost of Independent Environmental Audits of the development. (a) Independent Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements (2020) to the following frequency: (within 3 months of commencing construction; and (b) within 3 months of commencement of operations.	Within 3 months of commencement of operations.	Site Manager
		In accordance with the specific requirements in the Independent Audit Post Approval Requirements (2020), the Applicant must: (a) review and respond to each Independent Audit Report prepared under condition 7B of Schedule 4 where notice is given by the Planning Secretary. (b) submit the response to the Planning Secretary; and (c) make each Independent Audit Report, and response to it, publicly available within 60 days of submission to the Planning Secretary, unless otherwise	The Independent Audit Report is be made publicly within 60 days of submission to the Planning Secretary.	Site Manager

No.	Audit	Requirement	Timing	Responsibility
		agreed by the Planning Secretary.		
		Independent Audit Reports and the Applicant's response to audit findings must be submitted to the Planning Secretary within 2 months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approvals Requirements (2020) unless otherwise agreed by the Planning Secretary.	The Independent Audit Reports and the Applicant's response to audit findings must be submitted to the Planning Secretary within 2 months of undertaking the independent audit site inspection.	Avonlie Solar Farm

5.2 EMP monitoring and reporting

Monitoring will be undertaken to ensure the fire management program is achieving the required outcomes. This allows for an adaptive management approach and will enable the identification of issues and any remedial actions or adjustments to the EMP. Reporting requirements are listed in Table 5.

Table 5 - Reporting requirements

Reporting/ monitoring requirement	Timing
Prepare fire reports for ecological burns, accidental ignitions, and bushfire incidents (See Section 5.3).	Immediately post-fire/incident.
Review of fire reports to identify improvements needed and/or rehabilitation action – i.e., implementation of an adaptive management approach.	Immediately post-fire/incident Periodically for internal reporting purposes.
Checklist to ensure all fire mitigation and preparation/response measures and procedures are in place.	At least annually – pre- and post- fire season.
Fire Safety System assessment reports.	Periodically (nominal monthly)
Vegetation condition monitoring.	Periodically (nominal monthly)
Archiving of all fire reports, reviews, fire management actions and monitoring results.	As required.

5.3 Fire report for all fire incidents

A fire report should be completed for all fires that occur on or in the vicinity of the site, including all small fires and ignitions, prescribed ecological burn fires and wildfires.

If the incident is managed by the NSW RFS, the fire reports from that agency will be obtained, reviewed and kept on record for monitoring and reporting purposes for the Project.

The RFS will be notified of any fire that occurs on or in the vicinity of the site and a report will be prepared as a record a fire event and provided to the RFS.

A fire report should include details of the following:

- Fire name, ID and location.
- The person / agency responsible for the fire.
- The ‘command and control’ arrangements / incident team.
- A fire map, including a hand sketch or geographical information systems (GIS) map of the fire perimeter, at 1:25,000 or greater (e.g., 1:10,000) scale over a topographic base map. Fire mapping should include known or suspected ignition point/s, fire perimeter, fire paths, asset damage, islands of unburnt areas, fire control lines, and other information specific to the fire.
- Fire behaviour at different times and locations.
- Fire management/control measures and strategies. This may include a list of equipment, personnel, vehicles utilised and their role (including agencies/equipment/personnel).
- Any unintended fire impacts to ecological values or other assets.

- Follow up action and additional reporting requirements, such as near-miss or injury, extent of the damage, post-fire assessment requirements.

The annual monitoring for the site will include a summary of all fire incidents. The fire reports and outcome will also be used to inform an adaptive management approach (e.g., improvements in fire mitigation procedures and/or response procedures) and incorporated as part of the document amendment procedure (refer section 5.4).

5.4 Document amendment and distribution

This EMP will be reviewed:

- Annually.
- When there is a change of method and/or technology that may require this document to be reviewed and updated.
- Following an emergency drill, response, or significant event to which the EMP is relevant.
- Following significant changes in methodology or technology.

The plan will be amended and redistributed as required by NSW RFS District Office.

All revisions will be identified in the revision status table as indicated in the document control table at the beginning of this EMP.

In accordance with Schedule 3 Condition 26:

> *The Applicant must keep two copies of the plan [EMP] on-site in a prominent position adjacent to the site entry points at all times*

As per the condition, and as per the SoC established in response to the submission made by Fire and Rescue NSW, two copies of this EMP will be stored in a prominent 'Emergency Information Cabinet' located in a position directly adjacent to the site's main entry point(s).

6. References

Bureau of Meteorology (BoM). (2020). 'Climate statistics for Australian locations: Albury Airport AW Climate statistics for Australian locations (bom.gov.au)

NSW Department of Planning. (2011) *Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning'*

NSW Government. (2019). *Riverina Murray Regional Emergency Management Plan.* https://www.nsw.gov.au/rescue-and-emergency-management/regions/riverina-murray

NSW Rural Fire Service (RFS). (2014). *Development Planning: a guide to developing a Bushfire Emergency Management and Evacuation Plan*. https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0003/29271/DPP1079-Emergency-management-and-evacuation-plan-FORM.pdf

NSW RFS. (2019). *Planning for Bush fire Protection: a guide for councils, planners, fire authorities and developers*

NSW RFS (2019) *Fire Trail Standards*. https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0009/69552/Fire-Trail-Standards-V1.1.pdf

Hume Zone Bush Fire Management Committee, (2016). Hume Bushfire Risk Management Plan (BFRMP). https://www.rfs.nsw.gov.au/plan-and-prepare/know-your-risk/bush-fire-risk-management-plans

Appendix A Site characteristics

Table 6 - Site characteristics

Facility	
Facility type	Solar Farm.
Location	Sandigo NSW (2700).
Size of facility	581ha of solar infrastructure, including battery energy storage, site office, amenity building and transmission line.
Condition of buildings on site	Well Maintained
Is the facility located in a bushfire prone area	No
How it may be affected by a bushfire	• Destruction of infrastructure. • Harm to staff and visitors. • Grazing stock on site.
Are the buildings constructed against bushfire attack?	In accordance with PBP Guidelines, buildings on site will be designed and constructed commensurate with the level of bushfire risk, in accordance with the NCC.
Is an APZ in place	Yes, in accordance with Section 8.3.5 of the PBP guidelines prescribing minimum APZ requirements.
Staff	
Number of staff on site	3 staff and up to 10 contractors during operations.
Number of staff with support needs	Assume at least one.
Location of staff on site	Across the site but concentrated at the site office and amenity building.
Access and assembly	
Site access information	The sites main access is off Muntz Road
Emergency assembly point	Carpark near site office.

Appendix B Consultation

RE: Emergency Management Plan - Iberdrola Avonlie Solar Farm

SS Shane Smith <Shane.Smith@rfs.nsw.gov.au>
To HUBATKA, BEN
Cc Luke Crotty
Retention Policy DPTv2 - 7 Years Permanently Delete (7 years) Expires 20/08/2031
Internal Use

EXTERNAL SENDER: Be cautious, especially with links and attachments. Report phishing if suspicious.

Hi Ben,

I have had a look and all seems pretty good. I have cc'd Luke Crotty in who is our recently appointed 2IC for the district.

He has taken over my role in community risk. Not sure if he has been in touch yet? But he would like to make a time to come out and visit.

Thanks and Regards

Shane Smith
Operational Officer L2 – MIA District

RFS

P 02 6966 7800 **M** 0429 410 948 **E** shane.smith@rfs.nsw.gov.au
200 Wakaden Street, Griffith NSW 2680

www.rfs.nsw.gov.au

Re: Iberdrola Avonlie Solar Farm - Emergency Management Plan - Muntz Road, Sandigo, NSW, 2650

NT Neal Tait <Neal.Tait@fire.nsw.gov.au>
To HUBATKA, BEN
Retention Policy DPTv2 - 7 Years Permanently Delete (7 years) Expires 12/11/2030
Internal Use
If there are problems with how this message is displayed, click here to view it in a web browser.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

From: Neal Tait <Neal.Tait@fire.nsw.gov.au>
Sent: Sunday, 5 November 2023 10:12 PM
To: HUBATKA, BEN <ben.hubatka@iberdrola.com.au>
Subject: Re: Iberdrola Avonlie Solar Farm - Emergency Management Plan - Muntz Road, Sandigo, NSW, 2650

EXTERNAL SENDER: Be cautious, especially with links and attachments. Report phishing if suspicious.

Hi Ben,

Thanks for the email. I have had a read over the weekend of your EM Plan and looks good to me.

I have a full week this week at the moment but would like to try and schedule our site visit for the following week. Flexible with the days that week too.

If you have any questions before then, please just give me call or send me an email.

Regards,
Neal.

The linked image cannot be displayed. The file may have been moved, renamed, or deleted. Verify that the link points to the correct file and location.

CAPTAIN NEAL TAIT
Station Commander
Narrandera - Region West 3 | Fire and Rescue NSW
E: neal.tait@fire.nsw.gov.au
T: 02 6959 1380 | M: 0447 599 426
23 Twynam Street, Narrandera, NSW 2700

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Internal Use

Appendix C Hot Works Permit

Section 1. Details of Hot Work					
Site name				Work Permit #	
Location on site					
Details of hot work to be undertaken					
Date commencing		Start time	AM / PM	Finish time	AM / PM

Is there a Fire Ban in place? ☐ **YES** ☐ **NO** If **YES** do not proceed until approval is given by a manager

If there is no Fire Ban, what is the current Fire Danger Rating?

Current Fire Danger Rating	**Low-Moderate**	**High**	**Very High**	**Severe**	**Extreme**	**Catastrophic**

If current Fire Danger Rating is in a **shaded box** do not proceed until approval is given by Line Supervisor

Line supervisor name: Date approval given:

Section 2. Risk controls to be implemented			
Display this hot work permit adjacent to the proposed hot work.	☐ **Y**	Remove flammable liquids/substances within the hot work area.	☐ **Y**
Remove, cover or shield all combustible materials (incl. vegetation) within the hot work area.	☐ **Y**	Maintain fire watch for duration of hot work. Name:	☐ **Y** ☐ **N/A**
Cover drains and other open apertures for duration of hot work.	☐ **Y**	Isolate air conditioning / seal intakes for the duration of the hot work.	☐ **Y** ☐ **N/A**
Isolate fire detection / suppression equipment (where appropriate) for the duration of the hot work.	☐ **Y** ☐ **N/A**	Install barricades to prevent unauthorised entry into the hot work area.	☐ **Y** ☐ **N/A**
Erect flash screens around work site.	☐ **Y** ☐ **N/A**	Wet down any adjacent grassed area.	☐ **Y** ☐ **N/A**

Fire suppression devices to be used (minimum of one):

☐ Water hose and supply ☐ Appropriate fire extinguisher ☐ Fire Blanket ☐ Other:

Additional instructions/information including hot work equipment authorised for use:

Section 3 – Verification of risk controls			
I confirm that actions and risk controls required in Section 2 have been implemented for the work to be undertaken as described in Section 1.			
Date		Time	
Permit recipient		Position	

HOLD POINT FOR HOT WORK

Hot work cannot proceed until the Iberdrola Site Manager *(or delegate)* ***has been consulted to ensure controls have been implemented***

Date		Time	
Name of Iberdrola Coordinator (or delegate) consulted		Position	

Section 4. Completion of work			
Maintain fire watch continually for 30 minutes after cessation of hot work		Name:	
Additional monitoring required:			
I confirm that the hot work has been completed in accordance with this hot work permit and all work is complete, all equipment returned, and the site has been left in a safe condition.			
Permit recipient name		Signature	
Date		Time	

Appendix D Bushfire Action Statement

Stage	Trigger	Action
Preparation	Prior to bushfire season	Ensure all personnel are trained in emergency procedures and roles and responsibilities.
	At start of bushfire season	Ensure all fire control measures are in place. Ensure buildings are prepared to limit impact of a bushfire.
Response	Bushfire approaches	Alert emergency services. Initiate evacuation protocol (Refer 0).
	Fire front impacts site	Remain at refuge.
	Implement shutdown procedure	Shut down and isolate the solar farm from the substation. Isolate BESS and remotely monitor.
Recovery	After fire front has passed	Check with emergency services that it is safe to return to site before doing so. Complete post-fire report (Refer Sections 5.2 and 5.3).

A.1 Roles and responsibilities

Position	Area of responsibility	Name and Mobile phone number
Chief Warden	The Chief Warden's primary responsibility is to respond and co-ordinate the Emergency Control Organisation (ECO) as a whole in managing any emergency event until Emergency Services arrive. Initial actions of the Chief Warden • Proceed to scene/ area. • Evaluate the extent of the emergency. • Activate any alarms as required and request Emergency Services. • If safe to do so respond to any fire or spill and attempt to prevent escalation of incident. • Coordinate area wardens to initiate evacuation and area sweeps. • Shut down plant / equipment as necessary and if safe to do so. Ongoing actions of the Chief Warden	Benjamin Hubatka 0419 977 305

Position	Area of responsibility	Name and Mobile phone number
	• Continue to coordinate and manage emergency until Emergency Services arrive on site. • Ensure the flow of up-to-date information is maintained at regular intervals with Area Warden. • Liaise with emergency services. Concluding actions of the Chief Warden • Prior to standing down ensure all ongoing and outstanding matters and obligations are completed. • Facilitate post incident review or investigation process. • Complete the log of events for the Project/Operations Manager and the Local Emergency Management Committee (LEMC) to review the effectiveness of the emergency.	
Area Warden	Initial actions of the Area Warden • Proceed to scene / area. • Evaluate the extent of the emergency. • If safe to do so respond to any fire or spill and attempt to prevent escalation of incident. • Shut down plant/ equipment as necessary and if safe to do so. • Activate any alarms if required. • Evacuate personnel and casualties (where required). • Provide for first aid/medical assistance and/or coordinate first aiders within team. • Notify and provide a situation report to the Chief Warden providing a description of the incident and providing details of: o Threats, injuries, fatalities. o Environmental threat and damage. o Equipment threat and damage. o Actions taken. o Any further support required at site. • Assist the Chief Warden in appropriate plan of action to contain the immediate situation. Ongoing actions of the Area Warden • Continue to review and respond to emergency until the Chief Warden arrives on site to manage the emergency.	Wyatt Elford 0457 872 056 Daniel Church 0447 266 113

Position	Area of responsibility	Name and Mobile phone number
	• Ensure the flow of up-to-date information is maintained at regular intervals to the Chief Warden. • Assist emergency services at the scene. • Account for all personnel within their area (including contractors and visitors) at muster point. • Control access to the emergency site and implement restrictions on normal operations as appropriate until the Chief Warden arrives on site to manage the emergency. Concluding actions of the Area Warden • Prior to standing down ensure all ongoing and outstanding matters and obligations are completed.	
Emergency Log Keeper	Ongoing actions of the Emergency Log Keeper • Keep a timeline record of events / communications during an emergency event. Continually review the incident log for accuracy and if recording by electronic means, ensure that the data being entered is saved or backed up. • As requested, copy or print off log sheets for interested parties and mark the log sheet as an uncontrolled copy. • As this recording role is critical – The log keeper must not get involved in any activities other than on this checklist. • Clarify any confusion of events/actions as soon as apparent. Stand Down Actions of the Emergency Log Keeper • Under the direction of the Chief Warden, help coordinate post incident review or investigation process. • Complete the log of events for the Chief Warden. • On advice from the Chief Warden, complete all necessary log keeping and administration requirements. • Participate in the debrief. • Ensure all information received is filed correctly.	Benjamin Hubatka 0419 977 305 Wyatt Elford 0457 872 056 Daniel Church 0447 266 113
Head Count Warden	• Ensure copies of sign on sheets are placed in the assembly point boxes each day after pre-start. • During an emergency evacuation collect the visitors register and sign on sheets and conduct a head count at the muster point.	Benjamin Hubatka 0419 977 305 Wyatt Elford

Position	Area of responsibility	Name and Mobile phone number
	• Report head count status to the Chief Warden: "all persons accounted for" or "persons unaccounted for" giving details of missing persons.	0457 872 056 Daniel Church 0447 266 113
Emergency Control Organisation	• Undertake training and familiarisation required to fulfil allocated role in the event of an emergency. • Fulfil specified duties in the event of an emergency, or an emergency drill.	Benjamin Hubatka 0419 977 305 Wyatt Elford 0457 872 056 Daniel Church 0447 266 113
First Aid Personnel	Initial actions of First Aid Personnel Under the direction of the Chief Warden or Area Warden: • Proceed to scene with relevant Area Warden. • Evaluate the extent of any injuries. • Administer first aid (first aid personnel only, and only where safe to do so). • Assess if injured personnel can be evacuated safely. Ongoing actions of First Aid Personnel • Evacuate and attend any injuries at muster points. • Notify Emergency Services of any remaining personnel, and location, within building. • Assist Emergency Services onsite where required with ongoing treatment of injuries. • Provide details to Emergency Services of suspected injuries.	Benjamin Hubatka 0419 977 305 Wyatt Elford 0457 872 056 Daniel Church 0447 266 113
Emergency Services	• The role of the Emergency Services is to provide the supporting resources to assist in the management of the emergency.	Triple Zero (000) Local Emergency Management Officer Fred Hammer 02 6959 5510

Appendix E Evacuation protocol

In case of a fire emergency on site, the primary plan of action is evacuation. Details and protocol are described below.

A.2 Designated assembly points

In the event of a bushfire, personnel on site are to proceed to the designated assembly point on site. The designated assembly point is located in the carpark by the site office building in the south-east of the site, adjacent the substation (Figure 0-1).

Once all staff have assembled at the designated assembly points, transport to the off-site refuge site will commence. This involves exiting the Project via vehicle.

A.3 Transport plan

Work vehicles will be used to transport personnel to the refuge site. All personnel will evacuate site via the main site access point and be transported to the primary refuge site (Figure 0-2) or alternate refuge site (

Figure *0-1*).

The refuge site and access routes are described in section 5.

A.4 Offsite refuge

Table 7. Offsite refuge location and transportation information

	Primary refuge site	Alternate refuge site
Location	Marie Bashir Park Cnr Cadell Street and Twynam Street, Narrandera	Boree Creek Rural Fire Station
Is the refuge in an area away from effects of a bushfire	Yes	Yes
Are amenities available	Yes	Yes
Can the refuge accommodate the number of occupants?	Yes	Yes
Are there any personnel with support needs requiring a facility to support them?	Potentially	Potentially
Route from site to refuge site	Site egress – Muntz Road -Head north-east on Muntz Rd towards Sandigo Rd. -Turn right onto Sandigo Rd -Continue onto Orara St -Turn right onto Richmond St	Site egress – Muntz Road. -Travel east to Sandigo Road. -Turn North. At intersection with Stuart Highway turn North-west. Travel North. -Turn right onto onto Cadell St/Newell Hwy/A39. -Turn left onto Stanley St and -Left again at Dalgetty St.
Distance/time from site to refuge site	24km, 20 minute drive	25km, 22 minute drive
Is the route to the refuge through or near bushfire risk areas?	The route is through patches of land mapped as bushfire prone land. Should the route be compromised, the Greater Hume Local Emergency Management Committee is placed to organised detours for access into the Narrandera town centre, as well as other emergency management procedures for the area.	
Is transport provided on site for all personnel?	Work vehicles will be used.	
Are there any personnel with support needs requiring specific transport?	Potentially. Any personnel with specific transport needs will utilise the same transport (i.e., a specialised vehicle) to depart the site.	

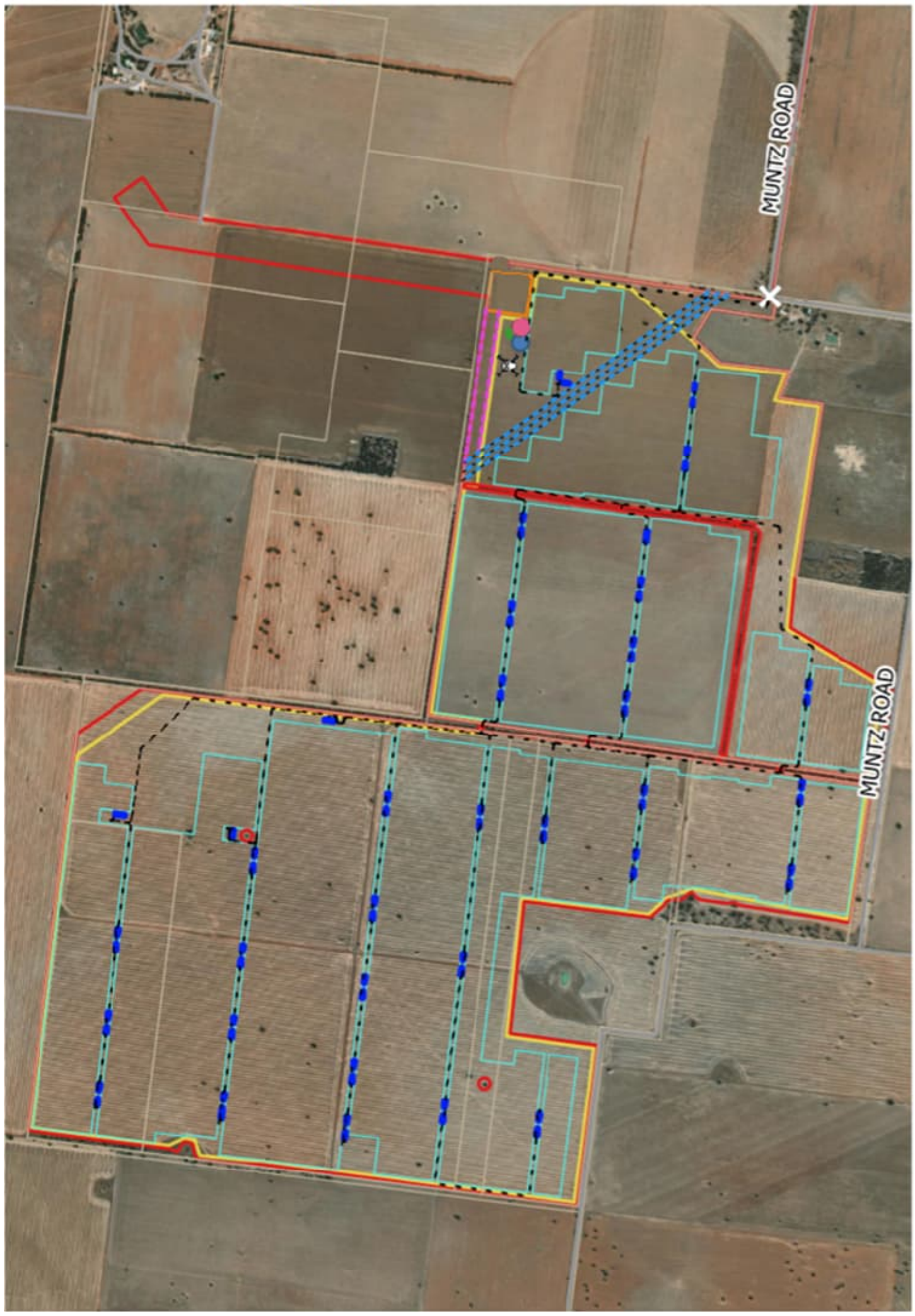


Figure 0-1 Emergency response plan

Figure 0-2 Primary transport and refuge site

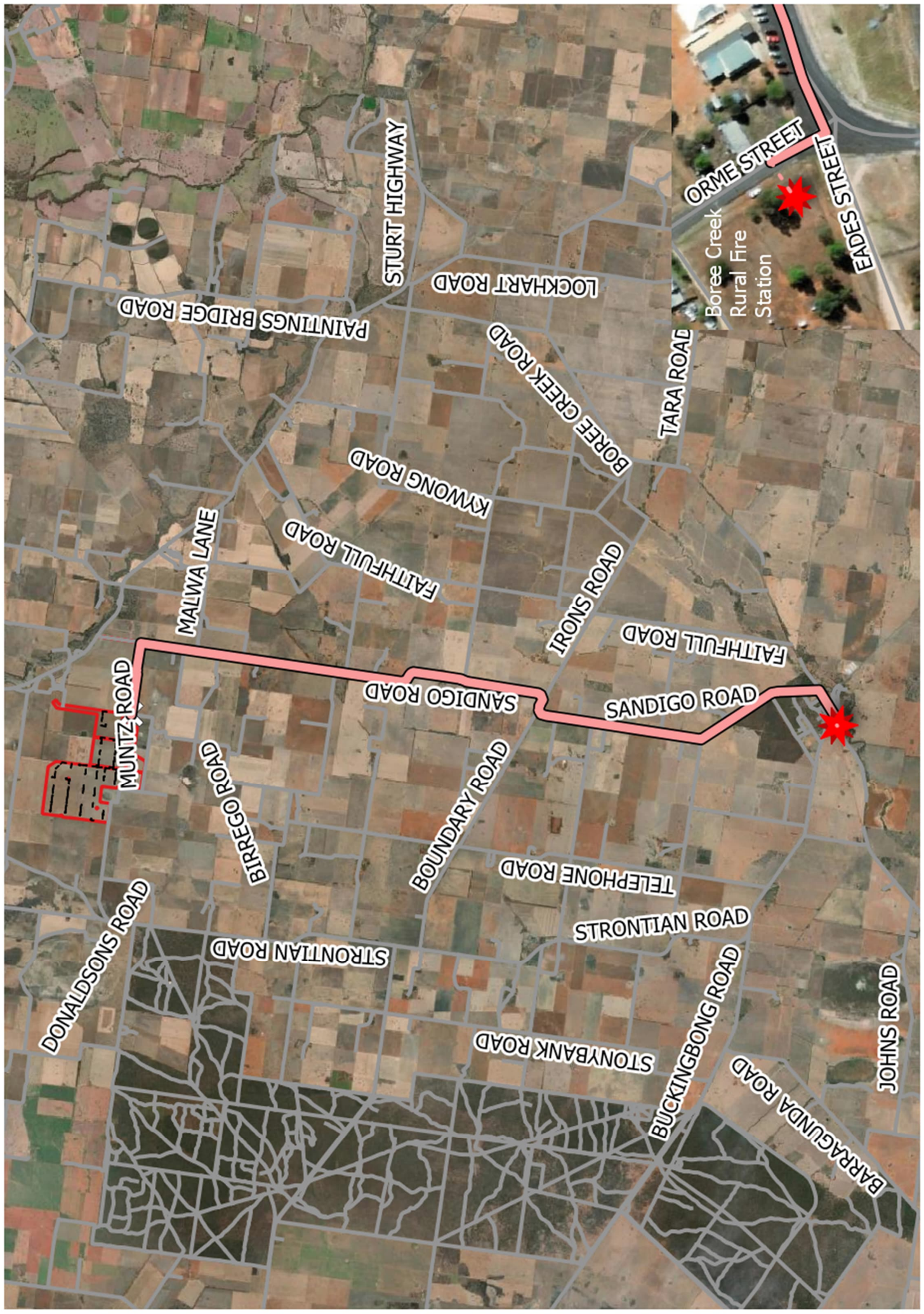
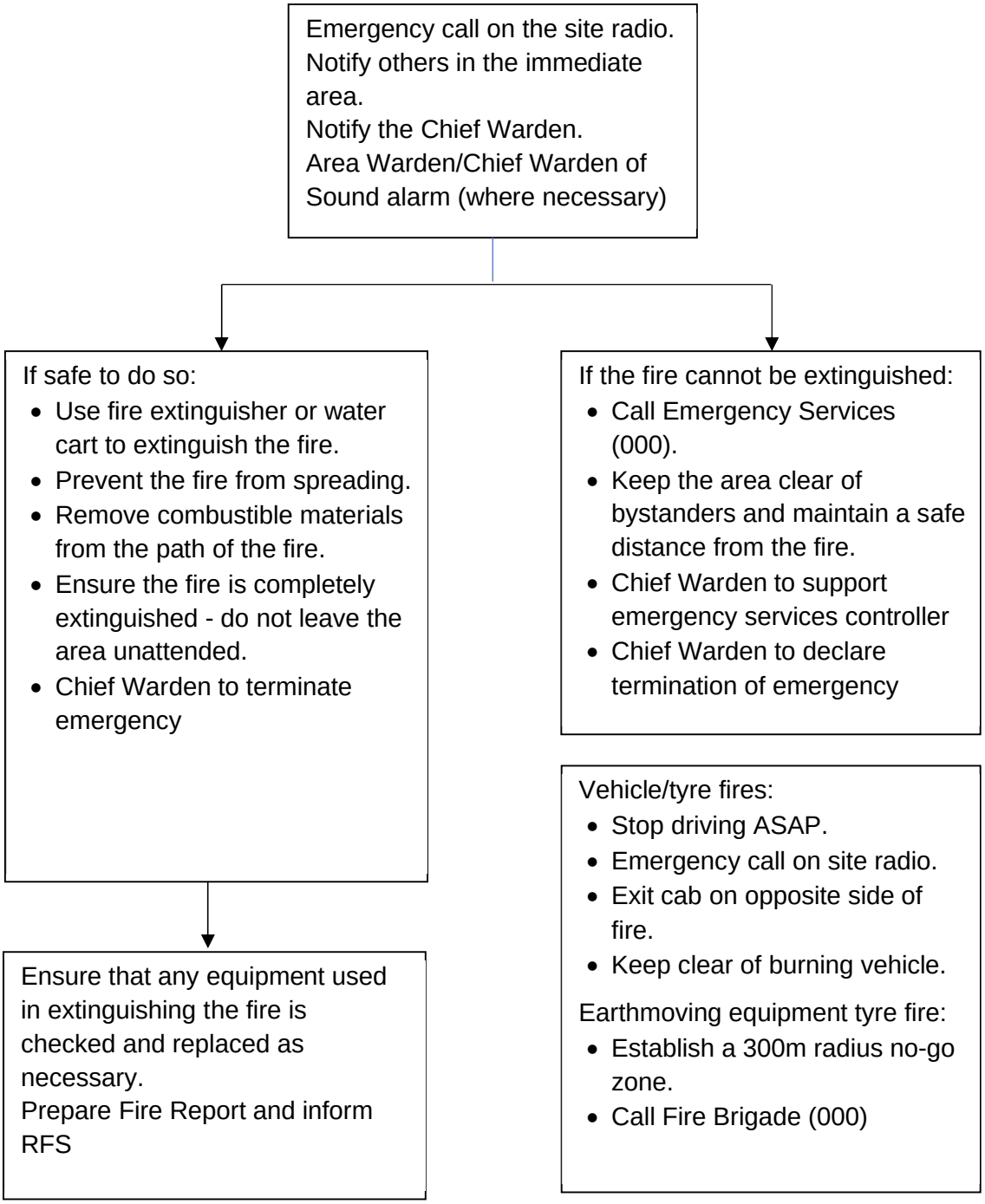


Figure 0-1 Alternate transport and refuge site

Appendix F Emergency Response – Fire Emergency Procedure

In case of fire on site, follow the steps below:



Appendix G Emergency contacts

Organisation	Office/contact	Phone number
Fire and Rescue NSW	Narrandera Fire Station	+61 2 6959 1380
NSW Rural Fire Service NSW RFS MIA District Office	Bushfire information line General enquiries only Fire Control Centre Griffith Fire Control Centre Wagga Wagga	1800 679 737 1800 NSW RFS 02 6966 7800 02 6971 4500
NSW Rural Fire Service	Website	www.rfs.nsw.gov.au
Emergency services	Ambulance and Fire	000
Narrandera Local Emergency Management Committee	Local Emergency Management Officer	Fred Hammer 02 6959 5510
Title/Role	**Office/contact**	**Phone number**
Operations & Maintenance Manager, Chief Warden and First Aid	Benjamin Hubatka	0419 977 305
Operations & Maintenance Technician, Deputy Chief Warden and First Aid	Wyatt Elford	0457 872 056
Operations & Maintenance Technician, Deputy Chief Warden and First Aid	Daniel Church	0447 266 113

Appendix H NSW Department of Planning – Hazardous Industry Planning Advisory Paper No. 1, 'Emergency Planning' (Jan 2011) m– Consistency Checklist

Section 4 - Developing the Emergency Plan	Where Section 4 requirements addressed in EMP
4.1 Introduction	Noted
4.2 Plan Title and Authority	Section 1 and Appendix A
4.3 Table of Contents	Refer - Table of Contents
4.4 Introduction and Definition of an Emergency	Section 1.1
4.5 Aim and Objectives of the Plan	Section 2.2
4.6 Roles of Agencies, Groups, Industry and the Community	Section 1.5, Section 3.2.11 Other measures
4.7 Hazards	Section 3.1 to 3.2
4.7.1 Details of Hazardous Materials	Section 3.3.9 to 3.3.10
4.7.2 Details of Other Hazards	Section 3.2
4.8 Types and Levels of Emergency	Refer Appendix F
4.9 Emergency Functions and Organisational Structure	Refer Section 4.1.1
4.9.1 Facility Emergency Control	Section 3.3
4.9.2 Identification	Section 3.3.11
4.10 Emergency Procedures	Appendix F
4.11 Emergency Resources	Section 3.3.11
4.11.1 Facility Emergency Control Centre	Not applicated to this scale of facility/development. Site office will be central location for alarm and other communication
4.11.2 Emergency Equipment	Section 3.3.11
4.11.3 Emergency Alarm System	Section 4.3 (updated) Appendix D.1

4.12 Activation of the Emergency Plan	Section 4.1, Section 4.3 (updated
4.12.1 Initial Advice to the Emergency Services	Section and Appendix F
4.12.2 Environmental Emergencies	3.3.11 Other measures
4.12.3 Special Cases	Not in scope of this EMP
4.13 Reporting of an Emergency	Section 5.3 Appendix F
4.14 Termination of an Emergency	Section 4.5 (updated)
4.15 Management of the Plan	Section 5.4
4.16 Supporting Information	Appendix E
4.16.1 Emergency Services Information Package	Not considered to be a large enough facility to trigger Hazardous Industry, hence ESIP not required. Approved battery capacity is not of sufficient size to warrant a Preliminary Hazard Assessment
4.16.2 Safety, Health and Environmental Information	Section 4
4.16.3 Location Maps	Appendix E
4.16.4 Site Layout Plans	Appendix E
4.16.5 Emergency Contact Numbers	Appendix G
4.16.6 Other Supporting Information	Appendix H
4.17 Glossary of Terms and Abbreviations	Refer - Acronyms and abbreviations