Bushfire Protection Assessment

QR National Train Support Facility

Maitland Road, Hexham

Prepared for
QR National

11 September 2012

DOCUMENT TRACKING

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This document has been prepared by Eco Logical Australia Pty Ltd.

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1 Property and proposal

Name:	QR National Train Support Facility		
Street or property name:	Maitland Road		
Suburb, town or locality:	Hexham	**Postcode:**	2322
Lot/DP no:	Lot 1 DP 128309, Lot 101 DP 1084709, Lot 102 DP 1084709, Lot 2 DP 735456, Lot 10 DP735235, Lot 104 DP 1084709, Lot 113 DP 755232, Lot 1 DP 155530, Lot 12 DP 1075150, Lot 1 DP1062240 and Lot 311 DP 583724		
Local Government Area:	Newcastle City Council		
Type of area:	Rural / Industrial		
Type of development:	Infrastructure / Industrial (Part 3A)		

1.1 INTRODUCTION

QR National commissioned Eco Logical Australia Pty Ltd (ELA) to prepare a bushfire protection assessment (BPA) for the proposed QR National Train Support Facility, Maitland Road, Hexham.

This assessment has been prepared by the ELA Senior Bushfire Consultant Daniel Copland.

1.2 LOCATION OF SUBJECT LAND

The subject site is bound by the Pacific Highway and the industrial area of Hexham to the east, by private rural lands to the southeast, by the Hunter Water Corporation pipeline and Hexham Swamp Nature Reserve to the south and southwest, by rural grazing lands to the northwest and by the New England Highway and the township of Tarro to the north (Figure 1).

Figures 2 and 3 show the subject land and the location of the proposed development in relation to the nearest bushfire prone vegetation.

1.3 DESCRIPTION OF PROPOSAL

The proposal involves the establishment of a Train Support Facility (TSF) (refer to Figure 2) that will provision trains with fuel, sand, water and oil and enable cab cleaning, routine inspection of trains, planned service and maintenance and emergency repairs, and will incorporate two provisioning tracks and two storage tracks. A temporary compound for site construction management and plant will be established in the north of the site.

The proposal also includes the establishment of two conservation areas that total approximately 51.81 hectares in close proximity to Hexham Swamp. These areas are to be managed in accordance with a Conservation Management Plan and are proposed to be subject of a Conservation Agreement under the *National parks and Wildlife Act 1974* to ensure long term management and security of biodiversity.

The TSF will accommodate working areas for a maximum of 30 employees at any given time. There is no residential or other habitable component of the proposed development.

A detailed outline is provided below of the key project elements.

1.3.1 Provisioning & Inspections

There will be two provisioning facilities provided at the Hexham TSF as follows:

1.3.1.1 Dedicated Provisioning Building

A custom designed permanent provisioning building will be constructed over the two provisioning roads and will enable full provisioning capabilities, simultaneously on both roads. The building foundations will be piled with a steel portal framed structure with a relatively flat roof pitch. Wall cladding will be a combination of corrugated steel sheeting, clear fiberglass sheeting for light entry and a fixed louvre system for ventilation. The roof will also be corrugated steel sheeting. It is intended that either end of the building will be open.

The building will be designed so that three locomotives will be able to be provisioned simultaneously (without the need to move) on each provisioning road. Elevated platforms within the building will provide personnel access to the walkway levels on the locomotives.

Two remote 100,000 litre self-bunded fuel storage tanks will be installed initially, with allowance for an additional two tanks (maximum) as the demand for fuel increases, to support the provisioning process. Fuel delivery rates of at least 800 litres/ minute/ locomotive are required.

The self-bunded tanks will be enclosed within a concrete bunded area to provide an additional level of environmental protection considering the proximity to sensitive wetland areas, in the event of an accidental spill.

A 5,000 litre oil storage tank is required, along with town water hoses to deliver water to all three locomotives.

Three 10 tonne sand bins are to be mounted adjacent to the shed in order to prevent additional loading on the building structure.

Sand, water, oil and fuel will be reticulated using piping systems to all the provisioning points within the shed.

1.3.1.2 Relocated Kooragang Provisioning Facility

The existing provisioning facility at Kooragang Island could be relocated to No. 3 Road to provide light provisioning capabilities for trains undergoing inspections and/or UTM.

This Kooragang provisioning facility consists of:

- A nominal 100,000 litre self-bunded portable fuel storage tank with attached pumping unit and fuelling booms. Fuel delivery rate for this unit is 500 litres/ minute.
- Provision for the storing and distribution of 2000 litres of new oil.

- A 27 tonne sand storage, distribution and delivery system.

The facility is to be placed on bunded concrete apron slabs with in-ground runoff collection pits to control contaminated runoff due to minor accidental spills. An awning is proposed to be built over this provisioning location for all weather operation.

Vehicular access to the provisioning facilities is proposed to be via a sealed road branching off from the main facility access road and run parallel to the MNR, between the ARTC HRR project and the TSF. This road will then circulate the relocated provisioning facility in a clockwise direction sense and head north to be parallel to No 3 Road and hence providing access to the apron constructed around the dedicated provisioning facility.

1.3.2 Servicing & Repairs

There are to be two separate servicing & repair buildings:

1.3.2.1 Wagon Maintenance Building

The primary function of the Wagon Maintenance Building is to allow for the routine inspection, scheduled and unscheduled servicing and repairs of Wagons. This will be the first maintenance building to be built at the facility.

The proposed Wagon Maintenance Building will be built over the proposed wagon maintenance roads. The foundations will be piled with a steel portal framed structure with a relatively flat roof pitch. Wall cladding will be a combination of corrugated steel sheeting, clear fiberglass sheeting for light entry and a fixed louvre system for ventilation. The roof will be sheeted in corrugated steel. Doors are to be provided at either end of the shed for security and weather protection purposes. An overhead travelling to lift the wagon bodies from wheel sets will be installed within the building. The maintenance access platforms and access stairs for the crane will be constructed entirely within the building.

The main body of the building will accommodate two coupled wagons on each of the two roads within the building. The building will be approximately 54 metres in length to provide adequate space around the wagons to perform maintenance. Off the side of the building will be the ancillary support spaces for storage of wagon spares, support workshop, lunchroom, male and female amenities including showers and administration and office area including an IT/Communications room.

As a part of the construction of the Wagon Maintenance Building, a wheel set storage bay will be constructed and will essentially be a hardstand area with rails set in for the storage of wheel sets in rows. The slab will require to be appropriately drained and allow for stormwater flow to the overall site stormwater collection and disposal system.

1.3.2.2 Locomotive Maintenance Building

The primary function of the locomotive maintenance building is to allow for the routine inspection, scheduled and unscheduled servicing and repairs of locomotives.

The Locomotive Maintenance Building will have two incoming roads and will accommodate four locomotives (two on each of the roads) within the building. The foundations will be piled with a steel portal framed structure, and relatively flat roof pitch. Wall cladding will be a combination of corrugated steel sheeting, clear fiberglass sheeting for light entry and a fixed louvre system for ventilation. The roof will be sheeted in corrugated steel. The floor will be depressed around each of the four maintenance bays with pedestrian access from the building floor level by stairs with handrail protection. Inspection pits will extend below the

area of depressed floor for inspection under the locomotives. Elevated steel access and work platforms will be provided on either side of each locomotive to provide safe work access to the servicing door level of the locomotives.

Doors are to be provided at either end of the shed for security and weather protection purposes. An overhead travelling crane will be installed within the building. The maintenance access platforms and access stairs for the crane will be constructed entirely within the building.

The main body of building will be approximately 56 metres. This includes an allowance for a 2 metre gap in between each locomotive, with an additional 5 metres clear at the far end of each locomotive. Off the side of the building will be the ancillary support spaces including storage for locomotive spares, workshop, lunchroom, male and female amenities including showers and administration and office area including an IT/ Communications room.

1.3.2.3 Locomotive Maintenance Building Locomotive Wash Bay

Located on the approach to the Locomotive Maintenance Building is a wash bay for cleaning of locomotives prior to their entry to the Locomotive Maintenance Building.

This will remove grime from the exterior of the locomotives, but mainly to remove oil, grease and dirt build-up from the bogies, engine compartments and undercarriage prior to entry to the workshop. The principal cleaning method will be steam cleaning with hand held high pressure water washing as a backup and for cleaning the locomotive exterior panels and roof.

There will be a depressed floor that will facilitate low level cleaning and as well high level and mid-level (locomotive walkway level) access platforms for the full length of the building to allow cleaning access to the engine bay and to the top of the locomotives. The locomotive wash will have precast concrete walls to prevent water mist drift and will be roofed over so that rainfall runoff does not enter the return wash water system. Entry to the depressed floor of the locomotive wash will be by steps protected by handrails.

Re-use of wash-down water is an important Ecologically Sustainable Development philosophy that will be adopted in the design of this facility. Runoff from the wash bay will enter a coarse waste coal trap and from there the water will be treated by flocculating and adjusting the ph. Water will then flow through an oil/grease separator and hence to a wash-down water storage. From the wash-down water storage the water will be chlorinated and pumped to a re-use header tank where it can be topped up with mains water or harvested rainwater. The water can then be recycled through the wagon wash system.

1.3.2.4 Service Vehicle Garage Building

A prefabricated steel framed and clad building (sized to house the permanent onsite maintenance vehicles) will be provided for the Breakdown Truck and quad vehicles used to transport maintenance people around the yard. The building will have three bays each with a panel tilt door for access. A minor amount of fuel (200 litre drum) and emergency response equipment and quad servicing equipment will be kept in this shed.

The site and proposed development will be subject to a range of planning and related legislation and controls across local, regional, State and Commonwealth level. The following is an overview of those relevant to the proposed development.

1.3.3 Administration

An Administration Building will also be constructed as part of the proposal. The building will be in accordance with current BCA standards and will not incorporate contain any accommodation areas or be habitable in any way.

1.4 ADJACENT ARTC DEVELOPMENT

The Australian Rail Track Corporation (ARTC) proposes to develop a project for Relief Roads (train line) adjacent to the QR National Hexham Redevelopment Project. This project is described in Parsons Brinckerhoff (2012) 'Proposed Hexham Relief Roads Ecological Assessment' as:

> *ARTC proposes to develop five Relief Roads (train lines) and associated infrastructure at Hexham in the NSW Hunter Valley (the proposed Project). The proposed Project is located approximately 15 kilometres north west of Newcastle and 176 kilometres north of Sydney by rail.*

The ARTC project completely separate to the QR National project that is the subject of this report, and as such has minimal impact on the bushfire protection measures required for the TSF.

Location

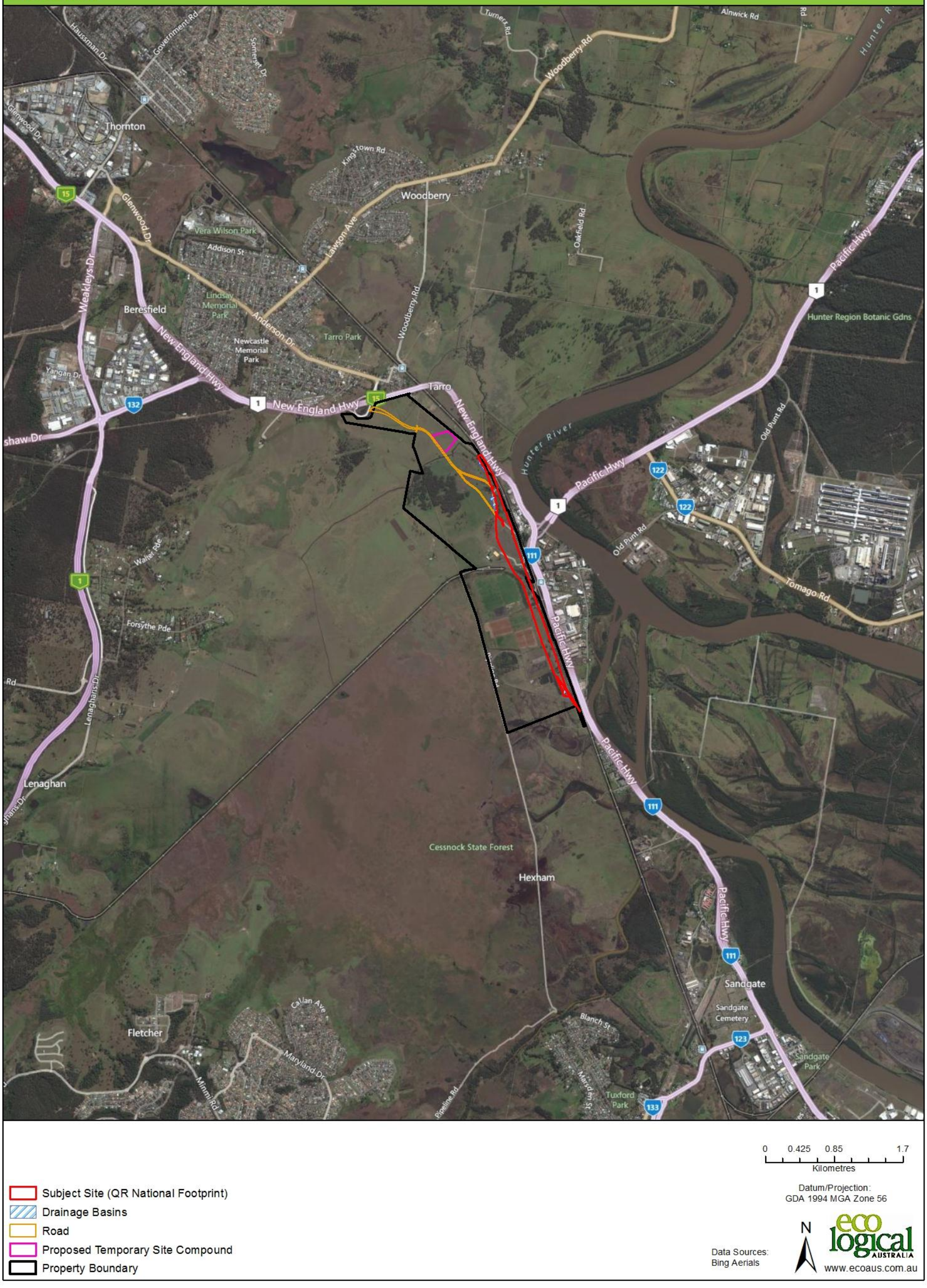

Figure 1: Aerial image locating the subject land

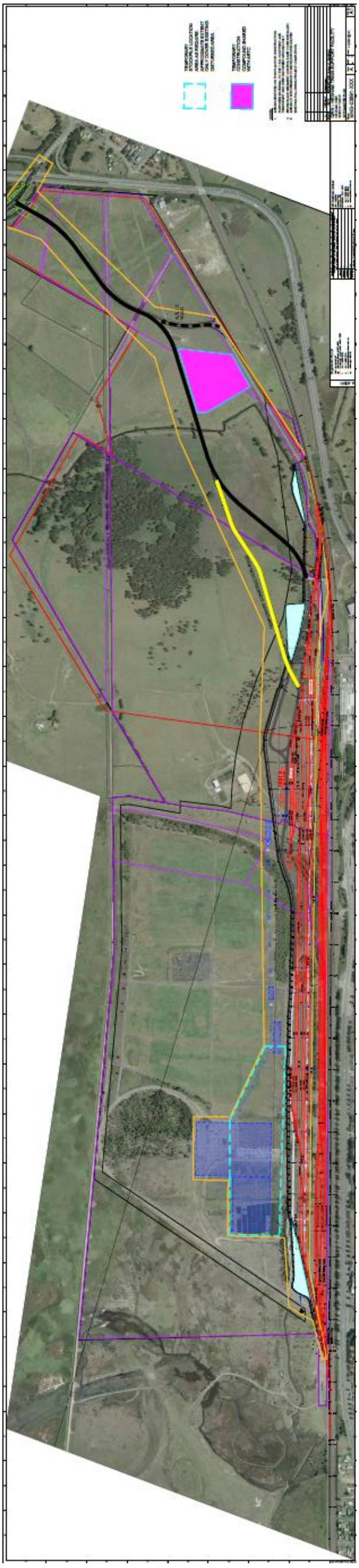

Figure 2: Aerial image identifying the TSF proposal footprint

Figure 3: Aerial image identifying the vegetation and slope (bushfire hazard)

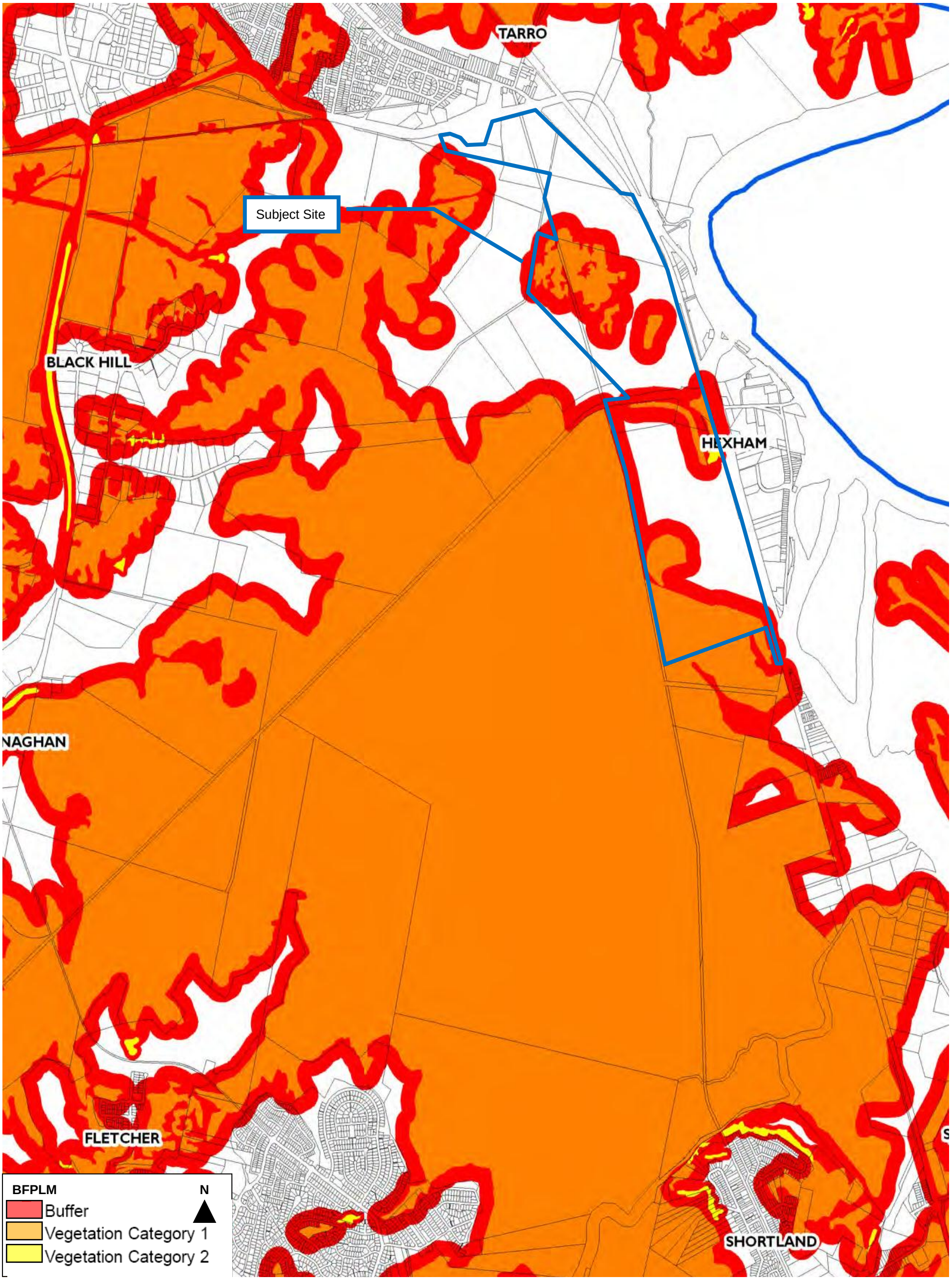

Figure 4: Newcastle City Council Bushfire Prone Land Map showing subject land

2 Bushfire threat assessment

2.1 ASSESSMENT REQUIREMENTS

The subject land is identified as being bushfire prone land on the Newcastle City Council Bushfire Prone Land Map (refer to Figure 4). As the development does not involve habitable dwellings, Special Fire Protection Purpose (SFPP) development or a habitable dwelling (Class 1, 2 or 3) the proposed development is to be assessed by the consent authority under the provisions of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which includes the consideration of the NSW Rural Fire Service (RFS) document *Planning for Bush Fire Protection* 2006 (NSWRFS 2006), referred to within this report as 'PBP'.

The following detailed assessment is strictly based on the methodology and requirements of PBP and supporting RFS policy.

As stated within Section 4.3.6.f of PBP, the Building Code of Australia (BCA) does not provide for any bushfire specific performance requirements for the development types proposed. As such the Asset Protection Zone and building construction requirements of PBP and *AS 3959 Construction of buildings in bushfire-prone areas* do not apply as deemed-to-satisfy provisions for bushfire protection. The general building fire safety provisions required by the BCA for the type of buildings proposed are accepted by PBP and RFS as acceptable solutions for the protection of occupants and the building from bushfires. However the aim and objectives of PBP still apply in relation to other matters of access, the provision of water and other services, emergency planning and landscaping.

2.2 VEGETATION TYPES

In accordance with PBP, the predominant vegetation class has been determined for a distance of at least 140 m out from the proposed development.

The study area comprises disturbed lands, including evidence of widespread soil disturbance (excavation and filling), interspersed with revegetation and minor depressions. The southern part of the study area has a long history associated with coal stockpiling, loading and unloading and to this day the site contains a significant quantity of coal tailings. The remaining study area contains remnant, albeit highly disturbed, swamp oak forest, salt marsh and freshwater wetland in the south, artificial freshwater wetlands (i.e. drains and ponds) and open pasture. Much of the site is currently subject to pasture improvement and cattle grazing.

As detailed within Figure 3, the most significant vegetation communities and structures in vicinity in terms of potential fire behaviour are within the Swamp Oak Sedge Forest within the north western portion of the site, and the Swamp Oak Swamp Forest community within the designated Rehabilitation Area in the south west of the site. Both of these communities potentially present a Forest hazard, however, significantly both of these areas are situated >140 metres from the proposed TSF building footprint.

There are areas of Saltmarsh in the southern extent of the site – this vegetation community and structure is not considered to constitute a bushfire hazard.

The remaining notable hazard areas within proximity of the TSF proposal are constituted by Coastal Freshwater Wetland, Coastal Sedgelands, and other Grassland/Pasture areas.

Therefore, the predominant vegetation type influencing the development is categorised under PBP as 'Freshwater Wetlands' and 'Grasslands'. All of these hazard areas occur directly to the west of the TSF building footprint with varying degrees of management and separation.

In all other directions is 'Managed Lands' in the form of existing development and infrastructure.

2.3 EFFECTIVE SLOPE

In accord with PBP the slope that would most significantly influence fire behaviour was determined over a distance of 100 m out from the proposed development where the vegetation was found.

The entirety of the subject site and surrounds is considered to be flat lands – consistent with a low-lying wetland area. Whilst there are some localised depressions and topographic features throughout, the hazard has been classified in the PBP category of 'Upslope/Flat'.

This assessment was made with a topographic map with 10 m contour intervals.

3 Asset Protection Zones (APZ)

3.1 ZONE COMPLIANCE

An APZ of 20 m is achievable and able to be provided (as a minimum defendable space area) between the TSF proposal footprint and the surrounding Freshwater Wetland and Grassland vegetation (refer to Figures 5 and 6). Although PBP does not provide for a specific APZ distance for the type of development proposed (PBP Section 4.3.6.f) the proposed APZ exceeds the PBP acceptable solutions for residential development as shown in Table 1. The proposed APZ is considered adequate and compliant. The land is currently highly disturbed and partially managed, therefore significant further vegetation clearance will not be necessary to formally establish the APZ.

Table 1: Asset Protection Zone and Bushfire Attack Level (BAL)

Direction[1]	Slope[2]	Vegetation[3]	PBP dwelling APZ[4]	Proposed APZ	AS3959 Bushfire Attack Level (BAL) [5]	Comment
Train Support Facility						
West	Upslope/Flat	Freshwater Wetland / Grassland	10 m	20 m	BAL-12.5 BAL-LOW (where >50m from hazard)	Due to existing management/disturbance, significant further clearing will not be required in order to establish APZ.

[1] Direction of assessment from proposed development.

[2] Effective slope assessed over 100 m from proposed development where the bushfire hazard occurs.

[3] Predominant vegetation classification over 140 m from proposed development.

[4] Minimum APZ required by PBP acceptable solution for residential development.

[5] Bushfire Attack Level (BAL) corresponding to construction requirements under AS 3959-2009 'Construction of buildings in bushfire-prone areas'.

3.2 APZ VEGETATION MANAGEMENT

The vegetation and fuels within the APZ should be managed to meet the intent and objectives of the performance requirements of an Inner Protection Area (IPA) as described within PBP. The following fuel management specifications can be used as a guide to achieve the PBP IPA performance requirements:

- No tree or tree canopy is to occur within 2 m of the building;
- The presence of a few shrubs or trees in the APZ is acceptable provided that they are well spread out and do not form a continuous canopy and are located far enough away from the building so that they will not ignite the building by direct flame contact or radiant heat emission; and
- A minimal ground fuel is to be maintained to include less than 4 tonnes per hectare of fine fuel (*fine fuel* means ANY dead or living vegetation of <6 mm in diameter *e.g.* twigs less than a pencil in thickness. 4 t/ha is equivalent to a 1 cm thick layer of leaf litter).

4 Construction standards

Table 1 provides an assessment of the Bushfire Attack Level (BAL) on the proposed development. The determination of the BAL has been made in accordance with Method 1 of *AS 3959-2009 Construction of buildings in bushfire prone-areas*. The BAL is based on known vegetation type, effective slope and managed separation distance between the development and the bushfire hazard.

The proposed TSF is rated as BAL-12.5 (>20m from the hazard) and BAL-LOW (where >50m from the hazard).

The building construction provisions within AS 3959 do not apply to the type of development proposed as a deemed-to-satisfy requirement under the BCA. Due to the type of development and compliance with BCA requirements for building fire, it is generally accepted that the development will survive bushfire attack. The BAL assessment above provides an understanding of the bushfire attack the building could experience in a worst-case bushfire scenario. The BAL assessment provides a platform on which to develop any further recommendations specific to the bushfire threat or the proposed building, if deemed appropriate.

To ensure building survival, the following additional recommendations are made and should be implemented where possible for certain closed building/warehouse arrangements (i.e. not required for permanently open structures):

1. Weepholes, vents and openable portions of windows be screened against the entry of embers with steel mesh with maximum aperture of 2 mm;

2. Weather strips to external doors (side-hung);

3. Nylon brush seals around roller doors;

4. Preventing or sealing gaps at joins of metal sheeting for walls and roof to prevent the entry of embers; and

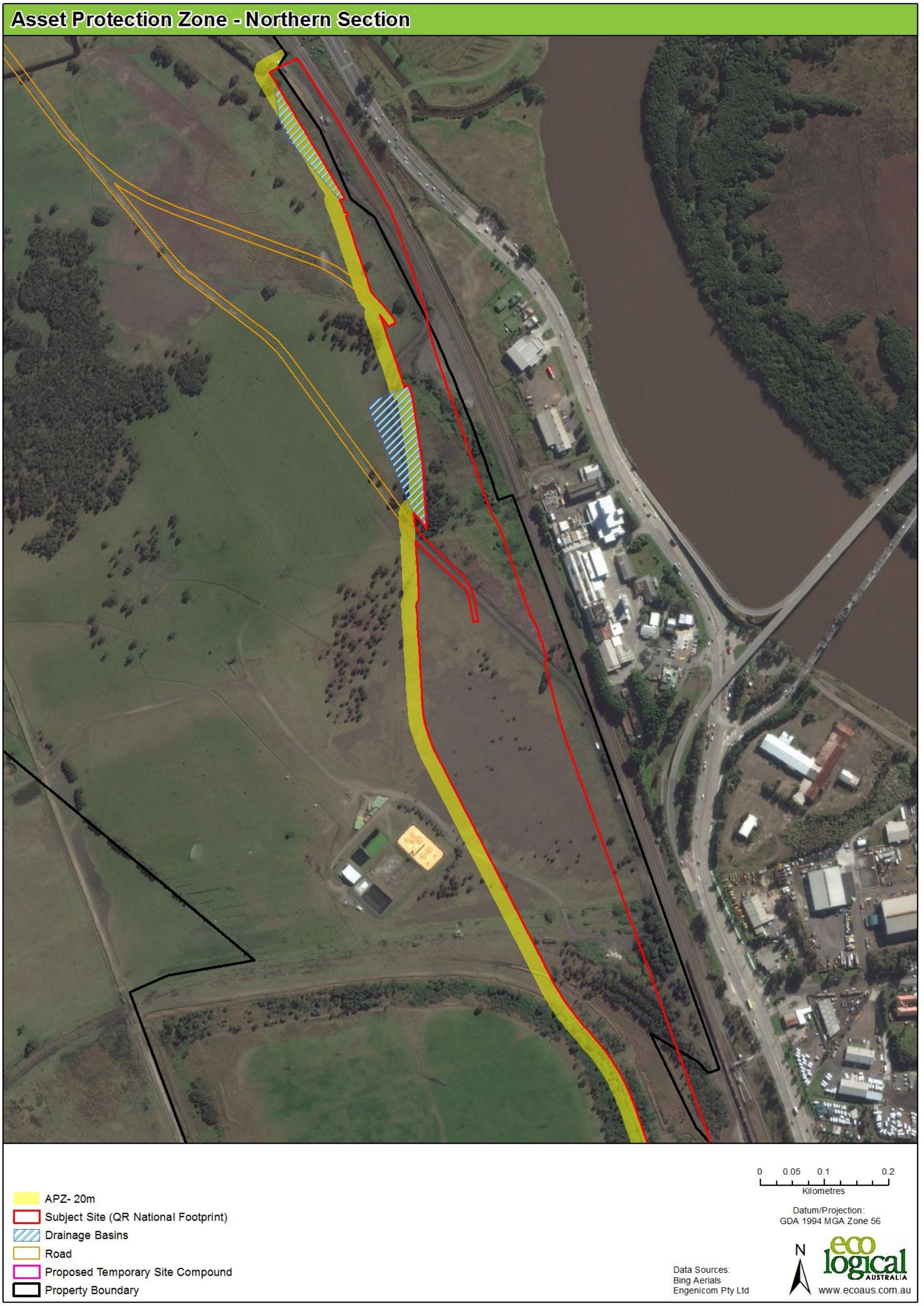

Figure 5: Northern Section - Asset Protection Zones (APZs) as per *Planning for Bush Fire Protection 2006*

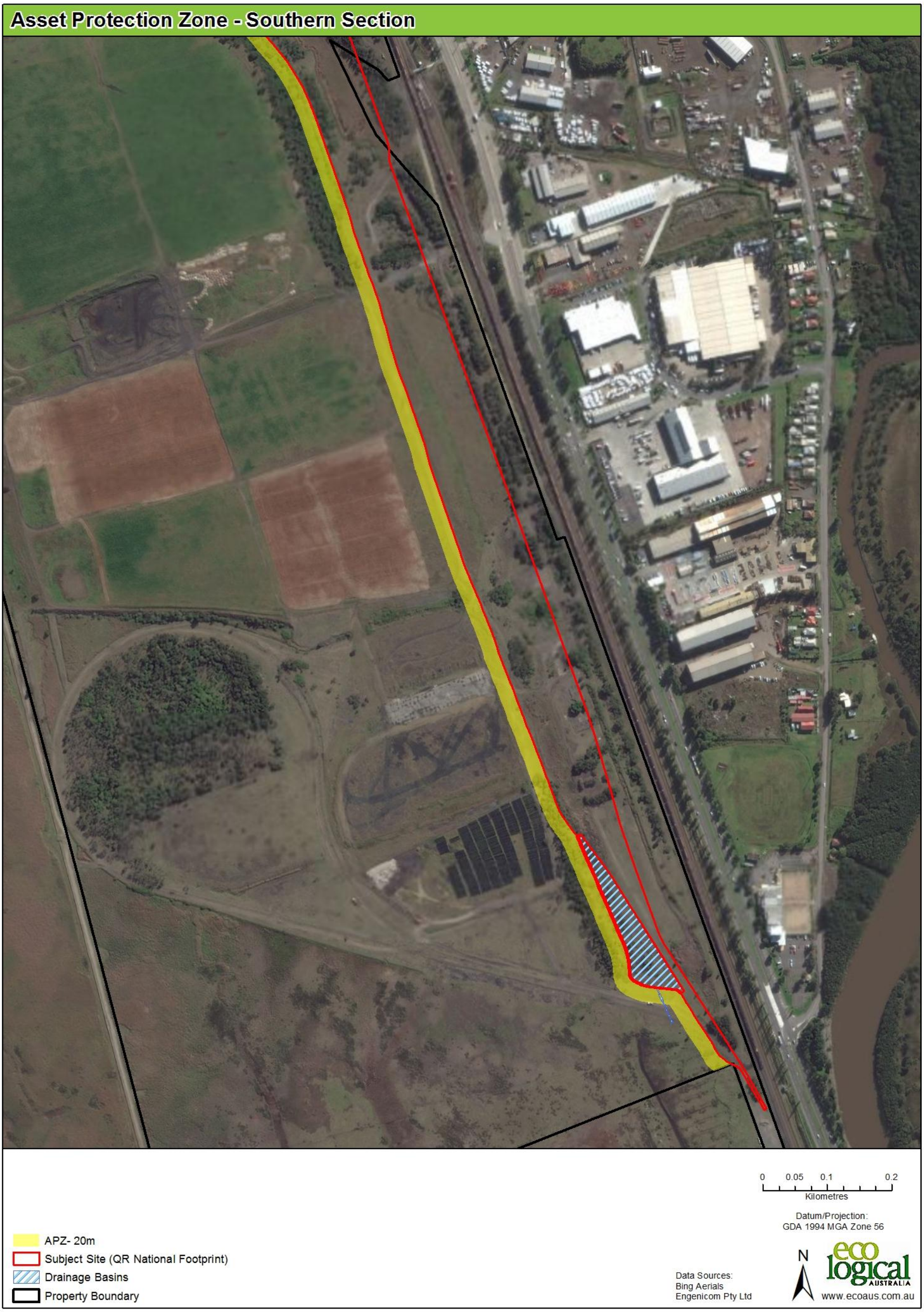

Figure 6: Southern Section - Asset Protection Zones (APZs) as per *Planning for Bush Fire Protection 2006*

5 Access

The assessment of access arrangements is to consider the adequacy of public road access, property access roads and other defendable space areas - potentially provided via implementation of perimeter access roads or, in some cases, fire trails.

In this particular project, the development area is accessed directly from the New England Highway (Tarro Interchange), with some connections via other existing local roads to the east of the site. The existing public roads comply with PBP road requirements for residential development and therefore no additional provisions are required to support the proposed development.

6 Water supply

The fire hydrant spacing, sizing and pressures are to comply with *AS 2419-2005 Fire hydrant installations – System design, installation and commissioning*. This standard requirement will address the PBP requirement for the provision of water for bushfire fighting.

7 Gas and electrical supplies

In accordance with PBP, electricity should be underground wherever practicable. Where overhead electrical transmission lines are installed no part of a tree should be closer to a powerline than the distance specified in "Vegetation Safety Clearances" issued by Ausgrid (NS179, December 2010).

Any gas services are to be installed and maintained in accordance with AS/NZS 1596:2008 (Standards Australia, 2008).

8 Assessment of environmental issues

At the time of assessment, Eco Logical Australia were currently assessing the subject site and surrounds for significant environmental features and threatened species identified under the *Threatened Species Conservation Act 1995* or the *National Parks Act 1974*.

Investigations into the presence and management of Aboriginal relics within the subject site are currently being undertaken in association with the relevant consent authority.

It is unlikely that the presence of any of the abovementioned environmental issues (once identified) will affect or be affected by the bushfire protection proposals in this report.

The project is being assessed under the provisions of Part 3A by the appropriate determining authority for infrastructure developments of this nature.

9 Recommendations and conclusion

The proposal consists of a development that will be a minimum of 20 metres to the east of the nearest bushfire hazard, being a Freshwater Wetlands and Grasslands.

The APZ and construction type is considered adequate as addressing the bushfire risk to occupants and building survival as required by Section 4.3.6.f of PBP. Additional recommendations are made in regards to ensuring ember protection for the proposed Train Support Facility buildings. Further recommendations are made to ensure PBP compliance on the provision of adequate access, water supply, APZ management and the installation of utilities.

The following recommendations apply:

1. The proposed APZ is to be managed as an Inner Protection Area (IPA) as described by *Planning for Bushfire Protection* and Section 3.2 of this bushfire assessment;

2. To ensure building survival, the following additional recommendations are made in relation to ember protection for the proposed Train Support Facility and should be implemented where possible for certain closed building/warehouse arrangements (i.e. not required for permanently open structures):

    a. Weepholes, vents and openable portions of windows be screened against the entry of embers with steel mesh with maximum aperture of 2 mm;

    b. Weather strips to external doors (side-hung);

    c. Nylon brush seals around roller doors;

    d. Preventing or sealing gaps at joins of metal sheeting for walls and roof to prevent the entry of embers; and

3. The fire hydrant spacing, sizing and pressures are to comply with *AS 2419-2005 Fire hydrant installations – System design, installation and commissioning*.

4. Electricity should be underground wherever practicable. Where overhead electrical transmission lines are installed no part of a tree should be closer to a powerline than the distance specified in "Vegetation Safety Clearances" issued by Ausgrid (NS179, December 2010).

5. Any gas services are to be installed and maintained in accordance with AS/NZS 1596:2008 (Standards Australia, 2008).

In the author's professional opinion the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed development, a standard that is consistent with *Planning for Bush Fire Protection* (RFS 2006).

Daniel Copland

Senior Bushfire Consultant

Eco Logical Australia (ELA) is recognised by the NSW Rural Fire Service and the NSW Department of Planning as a suitably qualified consultant as the company is listed as a Certified Business (BPD-BA-18882) under the Fire Protection Association of Australia's BPAD program.

FPA AUSTRALIA Certified Business Bushfire Planning & Design

FPA AUSTRALIA Corporate Gold Member

FPA AUSTRALIA Code of Practice Compliant

References

Ausgrid. 2010. *Network Standard NS 179 Vegetation Safety Clearances* (updated from Energy Australia. 2002. *Network Standard NS 179 (Vegetation Safety Clearances),* Sydney.)

NSW Rural Fire Service (RFS). 2006. *Planning for Bush Fire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*. Australian Government Publishing Service, Canberra.

Standards Australia. 2005. *The storage and handling of LP Gas*, AS/NZS 1596:2008, Fourth edition 2005, Standards Australia International Ltd, Sydney.

Standards Australia. 2005. *Fire hydrant installations - System design, installation and commissioning,* AS2419.1, Fourth edition 2005, Standards Australia International Ltd, Sydney.

Standards Australia. 2009 (Amendment 3). *Construction of buildings in bushfire-prone areas*, AS 3959, Third edition 2009, Standards Australia International Ltd, Sydney.

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