BUSHFIRE ASSESSMENT

PROPOSED TYRE RECYCLING FACILITY

LOT 3005 DP 1040568
9 Burlington Place, Rutherford

Date: **6/6/2024**

Prepared for: **Rutherford Tyre Recyclers Pty Ltd**

NEWCASTLE BUSHFIRE CONSULTING
5 Chartley Street, Warners Bay NSW 2282
(ph) 02 40230149 (mob) 0423 923284
email: mail@newcastlebushfire.com.au

I hereby declare that I am a BPAD accredited bushfire practitioner.

Accreditation No. BPAD16132

Signature

Date 6/06/2024

Couch Family Trust T/A
Newcastle Bushfire Consulting Pty Ltd A.B.N. 96 831 374 298
Bushfire and Building Sustainability Consultants

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Prepared By:

Phillip Couch GIFireE
Bach Info Science
Grad Dip Design for Bushfire Prone Areas
FPAA BPAD – Level 3 Accreditation Number BPD-PA-16132
Director Newcastle Bushfire Consulting

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

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1.0 EXECUTIVE SUMMARY AND COMPLIANCE TABLES

This report has assessed the proposed tyre recycling facility against the requirements of the Environmental Planning and Assessment Act 1979, AS3959 (2018) Construction of buildings in bushfire-prone areas and Planning for Bush Fire Protection (2019).

This report establishes that the building change of use complies with the acceptable solutions of Planning for Bush Fire Protection (2019).

TABLE 1 – PROPERTY DETAILS AND TYPE OF PROPOSAL

Applicant Name	Rutherford Tyre Recyclers Pty Ltd		
Site Address	9 Burlington Place, Rutherford	**Lot/Sec/DP**	Lot 3005 DP 1040568
Local Government Area	Maitland	**FDI**	100
Bushfire Prone Land	No, not mapped bushfire prone land		
Type of development	Tyre recycling facility within existing shed	**Type of Area**	Industrial
Special Fire Protection Purpose	No	**Flame Temperature**	1090K
Application Complies with Acceptable Solutions	Yes	**Referral to NSW Rural Fire Service (NSW RFS) required**	Council determination on referral

TABLE 2 – BUSHFIRE THREAT ASSESSMENT

	North	**East**	**South**	**West**
Vegetation Structure	Maintained Land	Maintained Land	Grassland	Maintained Land
Distance to Vegetation	140 metres	140 metres	102 metres	140 metres
Accurate Slope Measure	N/A	N/A	N/A	N/A
Slope Range	N/A	N/A	N/A	N/A
AS3959 (2018) Bushfire Attack Level (BAL)	BAL-LOW	BAL-LOW	BAL-LOW	BAL-LOW

TABLE 3 – PLANNING FOR BUSH FIRE PROTECTION (2019) COMPLIANCE

Performance Criteria	Proposed Development Determinations	Method of Assessment
Asset Protection Zone	Asset protection zones have been determined in accordance with Planning for Bush Fire Protection (2019). The asset protection zone will be maintained for the life of development and defendable space is provided on-site.	Acceptable Solution
Siting and Design	Buildings have been designed to minimise the risk of bushfire attack.	Acceptable Solution
Construction Standards **AS3959 (2018)**	Bushfire Attack Levels have been determined in accordance with Planning for Bush Fire Protection (2019) and AS3959 (2018). The highest BAL to the proposed building was determined to be **BAL-LOW**.	Acceptable Solution
Private and/or Public Road Infrastructure	The public road system is not affected or changed as part of this application.	Acceptable Solution
Property Access	The existing property access complies.	Acceptable Solution
Water and Utility Services	Water, electricity and gas services offer compliance with Planning for Bush Fire Protection (2019) Section 7.	Acceptable Solution
Landscaping	Landscaping to comply with Planning for Bush Fire Protection (2019) Appendix 4.	Acceptable Solution

The Planning Secretary's Environmental Assessment Requirements, SEAR Number 1810 dated 29/09/23, has requested an assessment of bushfire risks and asset protection zones (APZ) in accordance with NSW Rural Fire Service guidelines. This report addresses that request.

2.0 INTRODUCTION

2.1 PURPOSE OF REPORT

The purpose of this report is to establish suitable bushfire mitigation measures for the proposed tyre recycling facility within an existing industrial shed located at Lot 3005 DP 1040568, 9 Burlington Place, Rutherford, in order for the planning secretary to make determination of the proposed development pursuant to the requirements of Section 4.12(8) of the Environmental Planning and Assessment Act 1979.

Features on or adjoining the site that may mitigate the impact of a bushfire on the proposed development
There is significant development and road network surrounding the site in all directions. The site is not bushfire prone land and there is no mapped bushfire prone land within 500 metres of the site.

Likely environmental impact of any proposed bush fire protection measures
No clearing of native vegetation is required for the proposed development.

The site is not bushfire prone land and National Construction Code structural fire compliance will be adequate for this building.

2.2 PROPOSED DEVELOPMENT

Rutherford Tyre Recyclers Pty Ltd are seeking approval to establish a tyre recycling facility within an existing shed located at 9 Burlington Place, Rutherford (Lot 3005 / DP1040568) (the Proposal). The operation can be defined as a 'resource recovery facility'. The materials produced will be crumb rubber, recovered steel, recovered cotton, rubber pavers and rubber matting.

The Site covers an area of 1,655m^2, with a ~290m^2 existing shed on the site that has a ~35m^2 office attached on the eastern side of the shed. The Site is supported by an outdoor concrete hardstand area with access to the Site from Burlington Place via a driveway. The driveway provides access to the outdoor hardstand which has access to the shed, open awning and office. The office contains staff amenities and is located on the western side of the Site, near the Site entrance.

Prior to operations, minor infrastructure changes to the industrial shed and Site are proposed to enable the fit-out and use of the Site as a best practice tyre recycling facility. This will involve enclosing the existing open awning at the back of shed, removing the dividing wall and installing two roller doors, creating a larger, fully enclosed industrial shed on Site. The total area of the new shed will be ~638m^2. The two new roller doors will allow access into the industrial shed. A 9m above ground weighbridge will be installed on the hardstand area close to the access point of the

Site. The Site will have new markings to show the loading bay area and five car spaces for staff.

The Site will receive an average of 15 tonnes of used whole tyres per day, approximately 4,500 tonnes per annum. No other material will be received on-site. All incoming whole tyre deliveries are delivered into the Site by a 7.5 tonnes medium rigid vehicle (MRV), with access onto Site from Burlington Place. There will be four (4) deliveries of tyres per day. The MRV will proceed to the 9m above ground weighbridge to be weighed before proceeding to the loading area. The loading area is located outside the roller doors to the industrial shed and tyres will be unloaded by hand and immediately stacked in the Whole Tyre Storage Area. The MRV will be backloaded with products produced onsite before exiting the Site by proceeding further onto site, reversing back through the industrial building roller doors and turning right onto the weighbridge. The MRV will be weighed on the weighbridge to track the amount of product being removed from Site and will then exit the Site via the driveway access onto Bulington Place. An average of 18 vehicle movements (9 inbound and 9 outbound) will be generated by the Site per day. This includes up to five (5) staff vehicles and two trips by two 7.5 tonnes medium rigid vehicle (MRV) trucks. There will be one weekly waste collection on site.

All tyre recycling activities will occur inside the shed, including storage of all materials. No tyres or residual materials will be stored outside on the hardstand area. The used whole tyres are turned into crumb rubber on the Waste Tyre Recycling Production Line, which has a 98% efficiency. The first step involves the tyre de-beader to remove the metal wiring from inside the tyre. The tyre is then cut into a long rubber strip using the tyre strip cutter before being placed onto a conveyor belt and loaded into the whole tyre shredder. The next stage involves crushing the rubber blocks into mesh rubber powder using the double roller rubber breaker. A vibration screen is then used to separate the different sized pieces of crumb rubber. The Waste Tyre Recycling Production Line produces crumb rubber, residual steel and residual cotton from the whole tyres.

Some of the crumb rubber produced on-site will be used to produce rubber tiles and rubber mats in the Rubber Tiles Production area. This involves a small thermal-moulding process that coverts crumb rubber into rubber matting or rubber tiles. The first step involves mixing the rubber crumb with glue to create the bottom of the rubber tile. The top part of the rubber tile involves mixing rubber crumb, pigment and glue together in a barrel mixer. A vulcanizing machine is used to create vulcanized rubber tiles by compressing the rubber into dense, ultra durable, non-porous rubber tiles. The production of tiles or mats depends on the size of the mould used.

The facility will have two storage areas, both located on the eastern side of the industrial building. The Whole Tyre Storage Area will be used to stack the whole tyres after they have been delivered to the Site. The area capacity is 24m^3 with a maximum height of 3.5m. The Crumb Rubber Storage Area is used to store materials produced on site, including crumb rubber, recovered steel and cotton from the tyre recycling

process and rubber tiles and mats produced on site. The rubber tiles and mats will be stored on pallets. The area capacity is 24m^3 with a maximum height of 3.5m. The storage areas will be marked on the concrete floor using hard wearing paint.

The tyre recycling facility will operate 6 days a week, with times varying for deliveries and recycling operations. A breakdown of the weekly operation is as follows:

- Crumb Rubber Production
  - Monday – Friday: 5am – 6pm
  - Saturday: 8am – 1pm
  - Sunday & Public Holidays – Closed
- Tyre Delivery
  - Monday – Friday: 7am – 6pm
  - Saturday: 8am – 1pm
  - Sunday & Public Holidays – Closed

It is noted that landscaping at the front of the property facing Burlington Place has also been considered in this assessment.

3.0 BUSHFIRE ATTACK ASSESSMENT

3.1 VEGETATION CLASSIFICATION

Potential bushfire hazards were identified from Maitland Council's Bushfire Prone Mapping as occurring within the investigation area. Aerial mapping and inspection of the site reveals that the bushfire prone land map is reasonably accurate in respect to the current bushfire hazard.

The major vegetative threats have been determined using Planning for Bush Fire Protection (2019).

Primary vegetation structures have been identified in Figure 1 – Site Constraints Map and separation distances shown in Table 2 – Bushfire Attack Assessment.

PHOTO 1 - SITE PHOTO LOOKING EAST

View of the subject site looking east. Established industrial/commercial development surrounds the site.

PHOTO 2 - SOUTHWESTERN GRASSLAND

View of grassland located more than 100 metres south of the site. The grassland is punctuated by storage of industrial equipment and access trails.

FIGURE 1 – SITE CONSTRAINTS MAP

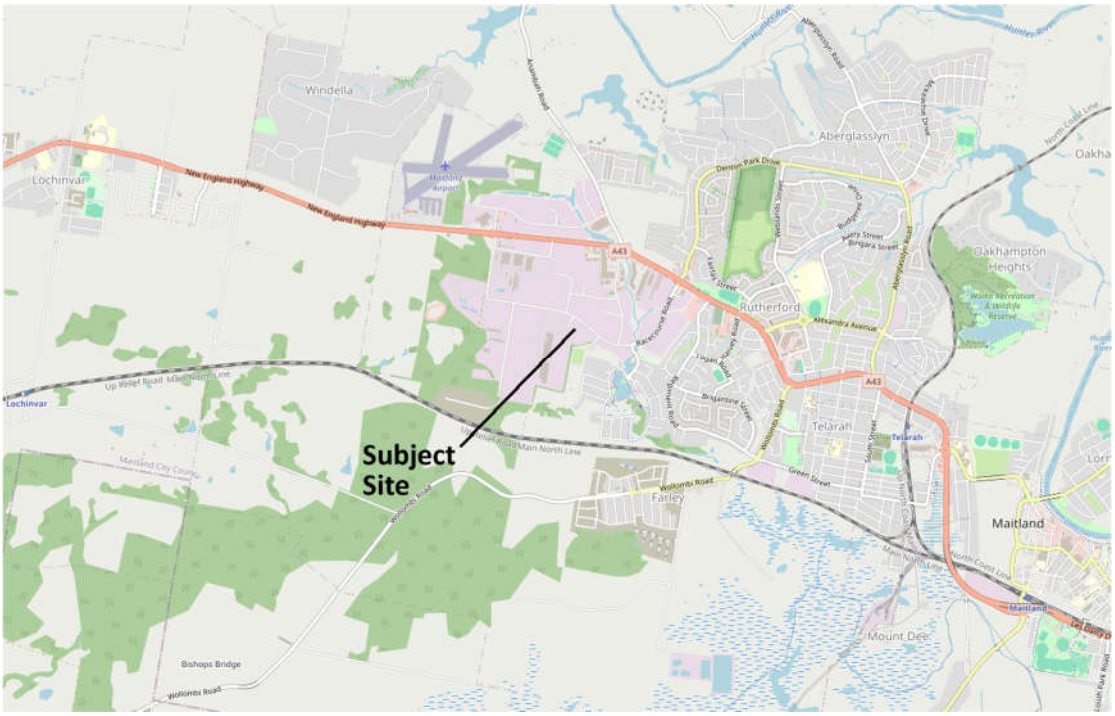

FIGURE 2 – LOCALITY MAP
Courtesy of OpenStreetMap

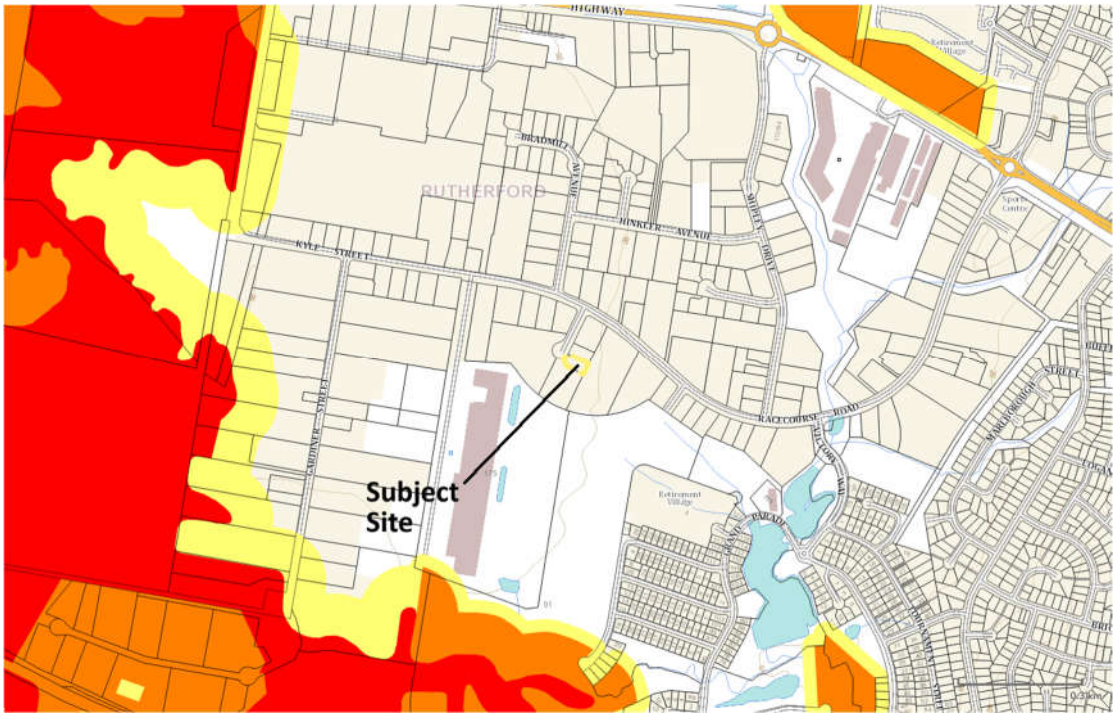

FIGURE 3 – COUNCIL'S BUSHFIRE PRONE LAND MAP

3.2 EFFECTIVE SLOPE

Effective Slope was measured using 2-metre contour data obtained from the Department of Lands and verified by a laser hypsometer on site. The laser hypsometer verified slope within the vegetation, calculating effective fire run slope from 5 separate measurements in each dominant direction.

Effective Slopes have been identified in Figure 1 – Site Constraints Map and slope ranges are shown in Table 2 – Bushfire Threat Assessment.

3.3 BUSHFIRE ATTACK LEVELS

BALs and relevant construction levels in accordance with Planning for Bush Fire Protection (2019) have been demonstrated in Section 1 Executive Summary and Compliance Tables.

3.4 COMPLIANCE WITH AIMS AND OBJECTIVES OF PLANNING FOR BUSH FIRE PROTECTION (2019)

The aims and objectives of Planning for Bush Fire Protection (2019) for the proposed development are addressed below.

Afford occupants of any building adequate protection from exposure to a bushfire
There are building exits facing away from the grassland and the southern shed will offer significant radiant heat shielding.

Evacuation planning in the event of bushfire should clearly indicate to building occupants to evacuate in a direction away from the fire.

Provide for a defendable space to be located around buildings
Defendable space is available surrounding the building.

Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevents direct flame contact and material ignition
There are significant expanses of managed land surrounding the building and no potential for direct flame contact. The building could be exposed to BAL-LOW. The site is not bushfire prone land and no landscape specific measures apply.

Ensure that safe operational access and egress for emergency service personnel and building users are available

The primary access to the facility offers compliance with Planning for Bush Fire Protection (2019) access requirements.

Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the Asset Protection Zone

The site is not bushfire prone land and no landscape specific measures apply. A review of the landscape plan has been made as optional compliance.

Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting)

Hydrant spans are compliant with AS2419.1. Electrical supplies to the local area are overhead with management of obstructions currently complying.

PHOTO 3 - SOUTHERN GRASSLAND

View of grassland located more than 100 metres south of the site. The grassland is punctuated by storage of industrial equipment and access trails.

4.0 UTILITY SERVICES AND INFRASTRUCTURE

4.1 WATER SERVICES

A reticulated water supply and street hydrant access are available providing coverage of the development in accordance with AS 2419.1, relevant to Planning for Bush Fire Protection.

4.2 ELECTRICITY SERVICES

The existing electrical transmission lines are located overhead. No part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.

4.3 GAS SERVICES

- Reticulated or bottled gas to be installed and maintained in accordance with AS1596 (2002) and the requirements of the relevant authorities. Metal piping is to be used.
- Fixed gas cylinders to be kept clear of flammable material by a distance of 10 metres and shielded on the hazard side of the installation.
- Gas cylinders close to the building are to have the release valves directed away from the building and be at least 2 metres from flammable material with connections to and from the gas cylinder being of metal.
- Polymer-sheathed, flexible gas supply lines to gas meters adjacent to the buildings are not to be used.

5.0 PROPERTY ACCESS

Property access is by way of Burlington Place providing access from the public road system directly to the private land, giving firefighters access to the building.

The existing property access road complies with Section 7 of Planning for Bush Fire Protection (2019).

6.0 LANDSCAPING MAINTENANCE

The site is not mapped bushfire-prone land, however, landscape measures have been based on the below as a conservative measure. A review of the landscape plans identifies them to comply with the below.

Trees should be located greater than 2 metres from any part of the roofline of a building. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 metres from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above the ground.

The landscaped area should be maintained free of leaf litter and debris. The gutter and roof should be maintained free of leaf litter and debris.

Landscaping should be managed so that flammable vegetation is not located directly under windows.

Ground fuels such as fallen leaves, twigs (less than 6 millimetres in diameter) and branches should be removed on a regular basis, and grass needs to be kept closely mown and, where possible, green.

7.0 RECOMMENDATIONS

Based upon an assessment of the plans and information received for the proposal, it is recommended that development consent be granted subject to the following conditions:

1. The site is not bushfire prone land and is located a considerable distance from mapped bushfire prone land.
2. Any building modifications shall comply with National Construction Code 2019 Structural Fire Safety requirements.

8.0 CONCLUSION

The final recommendation is that the site is not bushfire prone land but can offer compliance with Planning for Bush Fire Protection (2019). There is limited potential for bushfire attack at this site and National Construction Code 2019 Structural Fire Safety requirements are adequate to reduce that risk.

9.0 REFERENCES AND DISCLAIMER

References

Standards Australia AS3959 (2018) Construction of buildings in bushfire-prone areas.

Keith D. "Ocean Shores to Desert Dunes", Department of Environment and Conservation, Sydney, (2004).

Environmental Planning and Assessment Act 1979.

New South Wales Rural Fire Service Planning for Bush Fire Protection (2019).

Disclaimer

Despite the recommendations in this report, it is impossible to remove the risk of fire damage to the building entirely. This report assesses and provides recommendations to reduce that risk to a manageable level. It is of paramount importance that the recommendations are adhered to for the life of the structure and that all maintenance is performed to ensure a level of protection is provided to the building, occupants and firefighters.

Planning for Bush Fire Protection (2019) states that notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small, always remains.

AS3959 (2018) Construction of buildings in bushfire-prone areas states that the standard is designed to lessen the risk of damage to buildings occurring in the event of the onslaught of bushfire. There can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion. External combustible cladding is not recommended.