

# **Bushfire Assessment**

**In relation to**

**Nutrition Centre**

**Taronga Zoo**

**Prepared for:**

**Taronga Conservation Society Australia**

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## 1. Introduction

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ABAC Australian Bushfire Assessment Consultants have been commissioned by Taronga Conservation Society Australia (TCSA) to carry out a bushfire assessment in relation to the proposed Nutrition Centre project at Taronga Zoo.

The Nutrition Centre project is Stage 1 of the Taronga Zoo Wildlife Hospital (TZWH) project. Secretary's Environmental Assessment Requirements (SEARs) were issued for the TZWH project on 10 May 2021 and amended on 29 October 2021.

Item 18 of the Key Issues listed in the SEARs is titled "Bushfire & Safety", with the requirements listed as:

- *If the proposed development is on or near bush fire prone land, the EIS must include a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with Planning for Bush Fire Protection.*
- *Prepare an assessment on the emergency planning and management measures required to facilitate an emergency services response and the other obligations imposed by clause 43 of the Work Health and Safety Regulation 2000.*

The land within the site and surrounds is mapped as bushfire prone land for the purposes of Section 10.3 of the *Environmental Planning & Assessment Act 1979* (EP&A Act).

In relation to the first item of the SEARs above, the proposal is to be considered in relation to the NSW Rural Fire Service (RFS) guideline, *Planning for Bushfire Protection 2019* (PBP).

In relation to the second dot point of item 18 of the SEARs above, the consideration of matters such as obligations imposed by the *Work Health and Safety Regulation 2000* (WHS Regulation) is outside the scope of the bushfire assessment and is a matter for other disciplines.

Clause 43 (*Duty to prepare, maintain and implement emergency plan*) of the WHS Regulation relates to workplace health and safety and does not relate to bushfire assessment considerations. Clause 43 sets out various obligations on a person (or organisation)

conducting a business or undertaking at a workplace to ensure that an emergency plan is prepared for the workplace.

The following matters, inter alia, are outside the scope of this assessment:

- maintenance of vegetation on the site;
- any update to emergency evacuation procedures; and
- compliance or otherwise of the works with the relevant provisions of the National Construction Code, Volume 1: Building Code of Australia.

The scope of this bushfire assessment is limited to the consideration of the proposed Nutrition Centre only.

It is understood that the proposed work is subject to a SSDA and this assessment may be referred to the RFS to satisfy consultation procedures identified in the first dot point to item 18 of the SEARs.

## 2. The Proposal

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The proposal is for the Nutrition Centre project at Taronga Zoo, as Stage 1 of the Taronga Zoo Wildlife Hospital (TZWH) project.

The project is shown on plans prepared by *dwp* (Project: TWH 20-0527) titled *Taronga Wildlife Hospital, Sydney; Nutrition Centre*.

An extract of the drawing entitled *Site Plan – New Works Roof* (Drawing AA-N1001; Issue P – Issue for SSDA dated 14.12.2021) is at Figure 2.1 on the following page.



Figure 2.1: Site Plan Extract (Source: Client). North (approx.) to top of page.



### 3. The Site

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Figure 2.1 indicates that the location of the proposed Nutrition Centre is north of the existing Reptile Exhibit Centre and south-west of the Taronga Institute of Science & Learning.

The existing Nutrition Storage Building and another storage building north of that building are to be demolished to facilitate construction of the new Nutrition Centre facility.

The existing dry feed storage and office building to the west of the existing Nutrition Storage Building is also to be demolished.

The existing hay store building will be retained in its position immediately north of the proposed Nutrition Centre building.

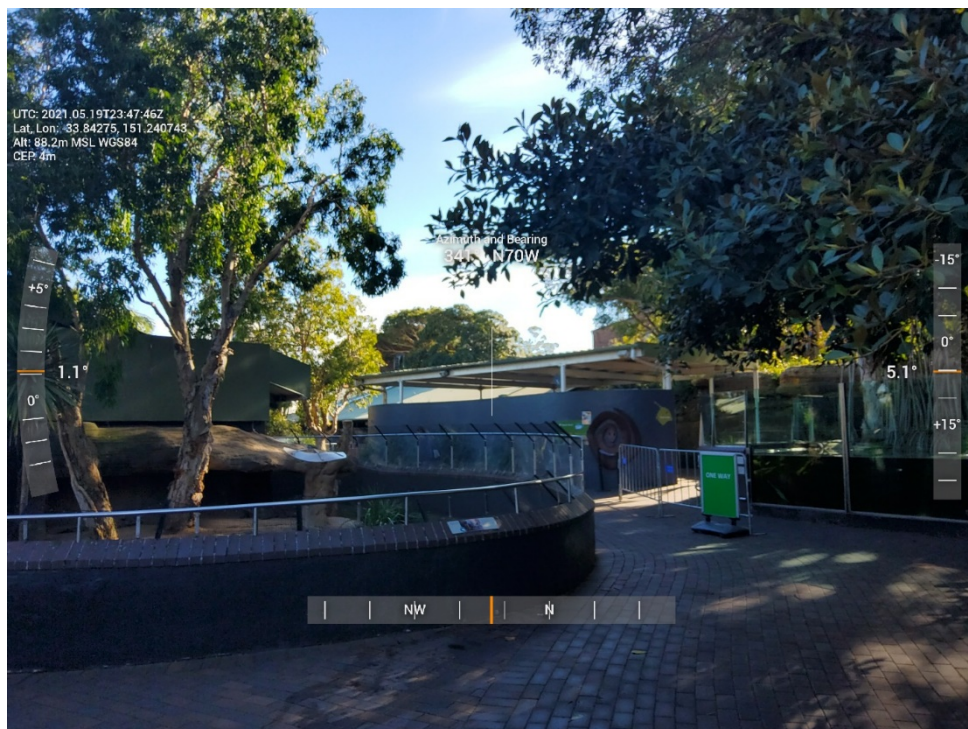
The following photographs show the area on and around the proposed Nutrition Centre.



**Photo 2.1: View of part of the site of the proposed Nutrition Centre, looking south towards the existing Reptile Exhibit Centre. The brick buildings to the left and right of the photo are to be demolished as part of the project.**



**Photo 2.2: View of an area of managed landscaping/gardens within the Zoo grounds near the proposed Nutrition Centre location.**



**Photo 2.3: Part of the existing Reptile Exhibit Centre, south of the proposed Nutrition Centre location.**



#### **4. Assessment of vegetation and slope**

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The Taronga Zoo site contains a considerable amount of vegetation mainly comprising landscaping and retained vegetation within the larger Zoo complex (see Photo 2.2).

Land within the Zoo grounds near the proposed Nutrition Centre is considered as managed land, with any retained areas of vegetation being maintained subject to the overall vegetation management regime within the Zoo site.

There is no unmanaged vegetation within 140 metres of the proposed Nutrition Centre project.

The slope of land around the location of the proposed Nutrition Centre is variable and any land within 100 metres of the Nutrition Centre is within the Zoo grounds.

## 5. Planning for Bush Fire Protection 2019

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The NSW Rural Fire Service guideline, *Planning for Bush Fire Protection 2019* (PBP), is applicable to all development on bushfire prone land.

For the purposes of Section 3.1.1 of PBP, the Nutrition Centre project is not development for a “*special fire protection purpose*” (SFPP) as defined under the provisions of Section 100B of the *Rural Fires Act 1997* or as listed under Clause 46 of the *Rural Fires Regulation 2013* and there are no specific controls applicable for the purposes of PBP.

As such, the proposal is subject to consideration as ‘other development’ and is not subject to any specific controls in Chapters 5 to 7 of PBP (which would apply to residential subdivision, infill (residential) development and SFPP).

Chapter 8 of PBP applies considerations for “other development”.

According to Section 8.1 of PBP, “other development” is to satisfy the aim and objectives of PBP.

The aim of PBP is *to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.*

The consistency of the proposal with the aim of PBP is considered in terms of the relationship between the proposal and the objectives of PBP, together with any other relevant considerations applicable to the proposal as per Chapter 8 of PBP.

The objectives of PBP are to:

- i.* afford buildings and their occupants protection from exposure to a bush fire;
- ii.* provide for a defensible space to be located around buildings;
- iii.* provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;

- iv. ensure that appropriate operational access and egress for emergency service personnel and occupants is available;
- v. provide for ongoing management and maintenance of BPMs; *and*
- vi. ensure that utility services are adequate to meet the needs of firefighters.

The relationship between the proposed Nutrition Centre project and the objectives of PBP are considered in Section 6 of this assessment.

Any relevant considerations applicable to the proposal as per Chapter 8 of PBP are discussed in Section 7 of this assessment.

## 6. Objectives of *Planning for Bush Fire Protection 2019*

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In relation to the objectives of *Planning for Bush Fire Protection 2019* (PBP), the following points are relevant:

**Objective (i):** *afford buildings and their occupants protection from exposure to a bush fire*

**Comment:** The proposed Nutrition Centre building will not be accessible to members of the public within the Zoo grounds. Occupation of the building will be limited to Zoo personnel only.

While the NCC/BCA and/or AS3959-2018 do not apply any bushfire-resisting construction requirements to the proposed Nutrition Centre, relevant provisions of the NCC/BCA apply to the proposed building in relation to (building) fire safety and (fire) services and equipment.

**Objective (ii):** *provide for a defensible space to be located around buildings*

**Comment:** The proposal does not reduce the extent of defensible space available within the Zoo grounds. The proposed Nutrition Centre is significantly more than 140 metres from the nearest areas of unmanaged potential bushfire hazard vegetation (outside the Zoo grounds).

**Objective (iii):** *provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings*

**Comment:** As per (ii) above, the proposed Nutrition Centre project will not reduce the extent of defensible space and there is sufficient separation distance available between the location of the Nutrition Centre and any unmanaged vegetation outside the Zoo grounds.

**Objective (iv):** *ensure that appropriate operational access and egress for emergency service personnel and occupants is available*

**Comment:** Internally, the Zoo also has its own firefighting capability and access to the Nutrition Centre by staff undertaking fire suppression activities is via internal pathways/roadways. Also, 24 hour on-site security personnel are available to deal with any emergency that may develop.

The Nutrition Centre project is to be in the secure services/trades area of the Zoo grounds, and public access is not available to that area. Vehicular access for operational purposes is



available from the main bus parking area, past the security building to the north of the Nutrition Centre project location.

The Nutrition Centre will be subject to a range of emergency management procedures that apply to the overall Zoo, most of which have nothing to do with bushfire. The existing emergency management procedures for the Zoo, which also include a range of potential events unrelated to bushfire, include measures for the evacuation and relocation of personnel.

Access to, and egress from, the Nutrition Centre project location does not involve any travel through or adjacent to any areas of unmanaged potential bushfire hazard vegetation.

**Objective (v):** *provide for ongoing management and maintenance of bushfire protection measures*

**Comment:** The proposed Nutrition Centre is not near any areas of unmanaged potential bushfire hazard vegetation. The areas around the project location are characterised by internal roadways and pathways consistent with the services/trades function of the particular area of the Zoo grounds where the building is to be located.

Any retained areas of vegetation near the Nutrition Centre location will be maintained subject to the overall vegetation management regime within the Zoo site.

**Objective (vi):** *ensure that utility services are adequate to meet the needs of firefighters*

**Comment:** Existing utility services are available to the Zoo site – including mains water, fire services to existing buildings and hydrants – to meet the needs of fire fighters.

The proposal is consistent with the objectives of PBP.

## 7. Other Development & Chapter 8 of PBP

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As “other development”, the proposal is not subject to any specific controls in Chapters 5 to 7 of PBP. Chapter 8 of PBP outlines considerations for “other development”.

The relevant considerations in Chapter 8 in relation to the Nutrition Centre project are, in Part 8.3):

- “Other non-residential development” (Part 8.3.1); and/or
- whether the proposal might constitute “hazardous industry” (Part 8.3.9); and
- “Commercial and industrial development” (Part 8.3.10).

In relation to Part 8.3.1, the document by Group DLA (Project No. GDL210224.01 dated 22/10/2021), *Building Code of Australia 2019 Amendment 1 Report for BCA Compliance (Project Name: Taronga Wildlife Hospital Sydney – Nutrition Centre)* has been reviewed for the purposes of this assessment.

The Group DLA report identifies the proposed Nutrition Centre building as comprising a mixture of Class 5, Class 7b and Class 8 for the purposes of classification under the *National Construction Code: Volume 1 – Building Code of Australia (Class 2 to 9 buildings)* (‘NCC/BCA’).

For the purposes of NSW G5.2 (Protection) of the NCC/BCA, the NCC/BCA and/or AS3959-2018 does not apply any bushfire-resisting construction requirements to the proposed Nutrition Centre.

Part 8.3.1 states that *whilst bush fire is not captured in the NCC for Class 5-8 buildings, the following objectives will be applied in relation to access, water supply and services, and emergency and evacuation planning:*

- *to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation – this was considered in relation to objective (iv) of PBP in Section 6 of this assessment.*
- *to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development – this was considered in relation to objective (iv) of PBP*

in Section 6 of this assessment. As a non-residential development, there are no residential occupants. The Nutrition Centre project will be in the secure services/trades area of the Zoo grounds, and public access is not available to that area. The existing emergency management procedures for the Zoo, which also include a range of potential events unrelated to bushfire, include measures for the evacuation and relocation of personnel.

- *to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building* – the proposed Nutrition Centre will incorporate relevant provisions of the NCC/BCA in relation to (building) fire safety and (fire) services and equipment. This is the subject of assessment of the proposal via the Group DLA report (and is outside the scope of this assessment).
- *provide for the storage of hazardous materials away from the hazard wherever possible* – this is discussed in relation to Section 8.3.9 below.

The nature of the proposed Nutrition Centre does not constitute “hazardous industry” for the purposes of Part 8.3.9 of PBP. There is nothing suggested by the nature of activities to be conducted in the building and/or any materials to be stored in the building that would tend towards any conclusion that the building might be susceptible to bushfire.

Materials to be stored in the building will be related to the feeding and nutritional needs of animals being cared for in the building. While this might include chemicals related to veterinary care of those animals, the building would not be used to store any highly flammable or hazardous chemicals.

In relation to Part 8.3.10 (Commercial and industrial development), the proposal does not neatly fit into either category but forms part of the overall Zoo complex. It does, however, incorporate Class 7 and Class 8 parts (according to the Group DLA report discussed earlier in this Section).

The proposed Nutrition Centre does not incorporate any residential (managers residence) component. Part 8.3.10 states that *where no residential component is included, commercial and industrial development is addressed through the aim and objectives of PBP*.

As noted in Section 5 of this assessment, the consistency of the proposal with the aim of PBP is considered in terms of the relationship between the proposal and the objectives of PBP, together with any other relevant considerations applicable to the proposal as per Chapter 8 of PBP.

Section 6 of this assessment addressed the proposed development in relation to the objectives of PBP. Any relevant considerations in Chapter 8 are discussed above in this Section.



## 8. Conclusion

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The Taronga Zoo site contains a considerable amount of vegetation, mainly comprising landscaping and retained vegetation within the larger Zoo complex.

The Zoo site is subject to detailed operational procedures and is stringently managed and monitored to ensure public safety and the safe and efficient operation of the Zoo. Aspects of this management include maintenance of the vegetation within the site and numerous exhibits.

The area of the Zoo grounds proposed for the Nutrition Centre is in the secure services/trades area of the Zoo grounds, and public access is not available to the relevant part of the site.

There is no unmanaged vegetation within 140 metres of the proposed Nutrition Centre project.

This assessment has noted that the NCC/BCA and/or AS3959-2018 does not apply any bushfire-resisting construction requirements to the proposed Nutrition Centre.

The proposal has been considered in relation to the aim and objectives of *Planning for Bush Fire Protection 2019*, together with relevant considerations in Section 8 of that guideline.

## 9. Recommendations

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In relation to bushfire protection matters for the proposed Nutrition Centre project at Taronga Zoo, it is recommended that:

- (i) any retained areas of vegetation on land within the Zoo grounds near the proposed Nutrition Centre be maintained subject to the overall vegetation management regime within the Zoo site; and
- (ii) emergency management and response procedures for the overall Zoo site be updated to reference the new Nutrition Centre building (noting that the building is proposed to replace an existing Nutrition Centre building in the same part of the Zoo grounds and is to be occupied by Zoo personnel, with no public access available).

## References

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Australian Building Codes Board (2019)

*National Construction Code: Volume One – Building Code of Australia 2019 (Amendment 1)*

Group DLA (2021)

*Building Code of Australia 2019 Amendment 1 Report for BCA Compliance (Project Name: Taronga Wildlife Hospital Sydney – Nutrition Centre (Project No. GDL210224.01 dated 22/10/2021))*

NSW Rural Fire Service (2019)

*Planning for Bush Fire Protection 2019*

Standards Australia (2018)

*Australian Standard 3959-2018: Construction of buildings in bushfire-prone areas*

### NOTE & DISCLAIMER:

1. *Only the plans referenced in this Assessment have been considered in relation to the aim and objectives of Planning for Bush Fire Protection 2019.*
2. *Notwithstanding the precautions recommended, it should always be remembered that bushfires burn under a range of conditions and an element of risk, no matter how small, always remains.*
3. *This Assessment makes no conclusion or inference as to the measures required for the compliance of the project with the relevant provisions of the Building Code of Australia (BCA). Issues related to compliance of the building with the BCA are outside the scope of this Assessment.*