



SIMTA Intermodal Terminal Facility- Stage 1

Bushfire Protection Assessment



SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

Part 4, Division 4.1, State Significant Development

BUSHFIRE PROTECTION ASSESSMENT

FOR THE

**SYDNEY INTERMODEL TERMINAL
ALLIANCE (SIMTA)**

**INTERMODEL TERMINAL FACILITY –
STAGE 1**

**MOOREBANK AVENUE,
MOOREBANK**

Report Number	Document	Preparation Date	Issue Date	Directors Approval
B142344 - 3	Final	19.1.2015	17.4.2015	<i>G.L.Swain</i>

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EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited has been commissioned by *Hyder Consulting*, on behalf of the *Sydney Intermodal Terminal Alliance (SIMTA)*, to prepare a report to provide advice on the bushfire protection measures required for the proposed construction of the Intermodal Terminal Facility Stage 1, Moorebank Avenue, Moorebank.

The SIMTA Stage 1 proposal involves the construction and operation of the necessary infrastructure to support a maximum container freight volume of 250,000 TEU (twenty-foot equivalent units) throughput per annum. Specifically, the Stage 1 Proposal includes the key components, which together comprise the intermodal terminal facility (IMT):

- Truck processing, holding and loading areas – entrance and exit from Moorebank Avenue;
- Rail loading and container storage areas – installation of four rail sidings with adjacent container storage area services by manual handling equipment initially and overhead gantry cranes progressively;
- Administration facility and associated car parking – light vehicle access from Moorebank Avenue;
- The rail link – located within the Rail Corridor, including a connection to the intermodal terminal facility, traversing of Moorebank Avenue, Anzac Creek and Georges River and connecting to the SSFL;
- Ancillary works – vegetation clearing, remediation, earth works, utilities installation/connection, signage and landscaping.

The SIMTA site comprises 83 hectares of land at Moorebank Avenue, Moorebank which is currently occupied by the Defence National Storage and Distribution Centre (**DNSDC**). The Department of Defence is currently relocating the DNSDC to the adjacent land to the north owned by the Commonwealth.

The SIMTA site is surrounded by Commonwealth owned land, including the School of Military Engineering (**SME**) to the west and undeveloped land held by the Department of Finance to the east.

The Stage 1 site is impacted by the Liverpool Bushfire Prone Land Map which shows that the buffer zone to Category 1 Bushfire Prone Vegetation on the land to the east and south of the site and to the west of Moorebank Avenue extends into the site. The rail link is partially located within Category 1 Bushfire Prone Vegetation and the vegetative buffer zone.

Based on the above, Section 79BA of the *Environmental Planning & Assessment Act 1979* would ordinarily apply to any development which is to occur on the site. However, by virtue of clause 1B of Section 79BA, this section does not apply to State Significant Development. Notwithstanding, in accordance with good environmental impact assessment practice, this report has considered the provisions of Section 79BA of the EP& A Act.

The land to the south of the site, containing the proposed rail link contains unmanaged Category 1 Bushfire Prone Vegetation and therefore this report considers the risks posed by the operation of the proposed rail link.

Section 79BA of the *Environmental Planning and Assessment Act* requires that the proposed development comply with the requirements of *Planning for Bushfire Protection 2006* with respect to the protection of persons, property and the environment from the danger that may arise from a bushfire.

Planning for Bushfire Protection 2006 provides specific deemed-to-satisfy provisions on the bushfire protection measures necessary for rural & residential subdivisions, the construction of “*Special Fire Protection Purpose Developments*” and the construction of Class 1, 2 and 3 buildings in Bushfire Prone areas. The document does not specify deemed-to-satisfy protection measures for Class 5 to 8 and 10 buildings as defined by the Building Code of Australia.

The document does provide the following advice for these classes of buildings:

“The Building Code of Australia does not provide for any bushfire specific performance requirements and as such AS 3959 -1999 does not apply as a set of “deemed-to-satisfy” provisions. The general fire safety construction provisions (of the BCA) are taken as acceptable solutions, but the aim and objectives of Planning for Bushfire Protection 2006 apply in relation to other matters such as access, water and services, emergency planning and landscaping/vegetation management”.

“Where the aim and objectives of PfPFP (Section 1.1) are not met, then the construction requirements for bushfire protection will need to be considered on a case-by-case basis”.

“In many cases, these types of developments will require on-site parking and loading areas. In such cases, it is prudent to place these facilities in the most appropriate location in order to establish defensible space for firefighting purpose”.

The objectives of *Planning for Bushfire Protection 2006* are:

- (i) *Afford occupants of any building adequate protection from exposure to a bushfire;*
- (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 direct flame contact and material ignition;*
- (iv) *Ensure that safe operational access and egress for emergency service personnel and residents is available;*
- (v) *Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the asset protection zones; and*
- (vi) *Ensure that utility services are adequate to meet the needs of firefighters and others assisting in bushfire fighting.*

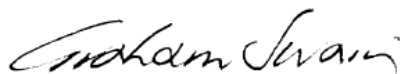
The Rural Fire Service have previously considered matters necessary to provide protection from the potential impacts that may arise from a bushfire occurrence within the bushfire prone vegetation nominated on the Bushfire Prone Land Map.

Matters considered necessary by the Rural Fire Service include:

1. The provision of a “defendable space” (Asset Protection Zone) to widths necessary to provide a safe working environment for firefighters and the protection of the building;
2. Fuel management of the vegetation within the defendable space;
3. Access provisions for emergency services;
4. Construction standards to the building;
5. Water supplies for firefighting operations; and
6. Evacuation provisions.

This report therefore examines these requirements and has found that the characteristics of the proposed development and the separation to bushfire prone vegetation provide that the site is suitable in terms of its intended use.

I also certify that the Development Proposal complies with the aim and objectives of *Planning for Bushfire Protection 2006*.



Graham Swain
Managing Director,
Australian Bushfire Protection Planners Pty Limited.
17.04.2015

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SECTION 1

INTRODUCTION

1.1 Background

The SIMTA Project involves the development of an intermodal facility, including warehouse and distribution facilities, freight village (ancillary site and operational services), stormwater, landscaping, servicing and associated works on the eastern side of Moorebank Avenue, Moorebank (the SIMTA site).

The SIMTA Project also includes a rail link, within an identified rail corridor (the Rail Corridor) which connects from the southern part of the SIMTA site to the Southern Sydney Freight Line (SSFL) – the entire area, the SIMTA site and Rail Corridor referred to as the Project Site.

The SIMTA Project is to be developed in three keys stages:

- ❖ Stage 1 – Construction of the Intermodal Terminal Facility and rail link;
- ❖ Stage 2 – Construction of Warehouse and Distribution Facilities;
- ❖ Stage 3- Extension of the Intermodal Terminal Facility and completion of Warehouse and Distribution Facilities.

A summary of the approval undertaken to date for the SIMTA site, relating to the SIMTA Project, include:

- ❖ EPBC Approval (No. 2011/6229) granted in March 2014 for the impact of the SIMTA Project on listed threatened species and communities (sections 18 and 18A of the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Commonwealth land (sections 26 and 27A of the EPBC Act).
- ❖ Concept Approval (No. 10 0193) granted by the Planning Assessment Commission (PAC) on the 29 September 2014 for the ‘Concept Approval’ of the SIMTA Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Both of these approvals involved the preparation of design and environmental assessment documentation.

1.2 Aim of this Assessment.

This report has been prepared for approval of the initial stage of the SIMTA Project, known as the Stage 1 Proposal. A summary of the works included in the Stage 1 Proposal is provided below. This report has been prepared to support a State Significant Development (SSD) Application for which approval is sought under Part 4, Division 4.1 of the EP&A Act.

This report has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) (ref: SSD 14-6766 and dated December 2014). Table 1 provides a summary of the SEARs and the section where they have been addressed in this report.

Table 1 SEARs (SSD 14-6766) compliance table

Section / number	SEARS	Where addressed
15	Bushfire Management – including but not limited to: An assessment against the Planning for Bushfire 2006 (NSW Rural Fire Service).	This report

The aim of this Bushfire Protection Assessment is to address the provisions of Section 79BA of the *Environmental Planning & Assessment Act* and in doing so:

- Determine the formation of the vegetation on and surrounding the site in accordance with the vegetation classification system contained in *Planning for Bushfire Protection 2006*;
- Undertake an assessment to determine the effective slope of the land on and surrounding the development site;
- Undertake a Bushfire Protection Assessment to determine bushfire protection strategies for the proposed development that address the following matters:
 - (i) The provision of building setbacks (Defendable Space) from vegetated areas and the siting of buildings to minimize the impact of radiant heat and direct flame contact;
 - (ii) Fire fighting water supplies;
 - (iii) Access requirements for customers/staff and emergency service vehicles;
 - (iv) Construction standards to be used for the future building within the proposed development to minimize the vulnerability of the building to ignition from radiation and ember attack;

- (v) Land management responsibilities; and
- (vi) Evacuation management.

1.3 Key Terms.

Table 2 provides a summary of the key terms which are included within this report. Figure 1 on Page 10 also provides an indication of the site areas discussed in this table.

Table 2. Key terms

Term	Description
Concept Plan Approval	Concept Plan Approval (MP 10_0193) granted on 29 September 2014 for the development of the SIMTA Moorebank Intermodal Terminal Facility at Moorebank. This reference includes the associated Conditions of Approval (CoA) and Statement of Commitments (SoC) which form the approval documentation for the Concept Plan Approval.
EPBC Approval	Approval (No. 2011/6229) granted under the EPBC Act on March 2014 by the Commonwealth Department of Environment for the development of the SIMTA Moorebank Intermodal Terminal Facility at Moorebank.
SIMTA Project	The SIMTA Moorebank Intermodal Terminal Facility at Moorebank as approved by the Concept Plan (MP_10_0913).
SIMTA site	Includes the former Defence National Storage and Distribution Centre (DNSDC) site, the land owned by SIMTA which is subject to the Concept Plan Approval (refer to Figure 1).
Rail Corridor	Area defined as the 'Rail Corridor' within the Concept Plan Approval. The rail link is also included within this area (refer to Figure 1).
Project site	Includes the SIMTA site and the Rail Corridor, i.e. the entire site area which was approved under the Concept Plan Approval (refer to Figure 1).
Stage 1 site	The subject of this EIS, the western part of the SIMTA site which includes all areas to be disturbed by the Stage 1 Proposal (including the Operational area and Indicative Construction area) (refer to Figure 1). This area does not include the Rail Corridor.
Construction area	Extent of construction works, namely areas to be disturbed during construction of the Stage 1 Proposal (refer to Figure 1).
Operational area	Extent of operational activities for the operation of the Proposal (refer to Figure 1).
Proposal site	Includes the Stage 1 site and the Rail Corridor, i.e. the area for which approval (construction and operation) is sought within this EIS.
Rail link	The rail link including the area on either side to be impacted by the construction works included in the Stage 1 Proposal.
The Proposal	Stage 1 of the SIMTA Moorebank Intermodal Terminal Facility including construction and operation of the intermodal terminal facility and rail link, i.e. all works and built form for which approval is sought in this EIS/Technical Report.
MIC Proposal	The development of an intermodal facility, associated commercial infrastructure (warehousing) and a rail link (3 options have been provided) to be located on the MIC site, for which an approval, under Part 4, Division 4.1 of the Environmental Planning and Assessment Act 1979. This proposal is currently under assessment by the Department of Planning and Environment.
MIC site	The former School of Military Engineering site to the immediate west of the SIMTA site, across Moorebank Avenue.

Figure 1 – Key terms and proposal locations



1.4 Proposal Overview

The Proposal involves the construction and operation of the necessary infrastructure to support a maximum container freight volume of 250,000 TEU (twenty-foot equivalent units) throughput per annum. Specifically, the Stage 1 Proposal includes the key components, which together comprise the intermodal terminal facility (IMT):

- Truck processing, holding and loading areas – entrance and exit from Moorebank Avenue;
- Rail loading and container storage areas – installation of four rail sidings with adjacent container storage area services by manual handling equipment initially and overhead gantry cranes progressively;
- Administration facility and associated car parking – light vehicle access from Moorebank Avenue;
- The rail link – located within the Rail Corridor, including a connection to the intermodal terminal facility, traversing of Moorebank Avenue, Anzac Creek and Georges River and connecting to the SSFL;
- Ancillary works – vegetation clearing, remediation, earth works, utilities installation/connection, signage and landscaping.

The intermodal terminal facility would operate 24 hours a day, 7 days a week.

1.5 Site Description

The SIMTA site, including the Stage 1 site, is located approximately 27 kilometres south-west of the Sydney Central Business District (CBD) and approximately 26 kilometres west of Port Botany. The SIMTA site is situated within the Liverpool Local Government Area (LGA), in Sydney's South West Sub-Region, approximately 2.5 kilometres from the Liverpool City Centre.

The SIMTA site is located approximately 800 metres south of the intersection of Moorebank Avenue and the M5 Motorway. The M5 Motorway provides the main road link between the SIMTA site and the key employment and industrial areas within the West and South Western Sydney Sub-Regions. The M5 Motorway connects with the M7 Motorway to the west, providing access to the Greater Sydney Metropolitan Region and NSW road network. Similarly the M5 Motorway is the principal connection to Sydney's north and north-east via the Hume Highway.

The Southern Sydney Freight Line (SSFL) is located one kilometre to the west of the proposed SIMTA site. The SSFL is a 36 kilometre dedicated freight line between Macarthur and Chullora.

The SIMTA site was recently operating as the Defence National Storage and Distribution Centre (DNSDC) however Defence has recently relocated this operation and vacated the SIMTA site. The majority of land immediately surrounding the SIMTA site is owned and operated by the Commonwealth and comprises:

- School of Military Engineering (SME), on the western side of Moorebank Avenue directly adjacent to the SIMTA site;
- Holsworthy Military Reserve, to the south of the site on the southern side of the East Hills Passenger Railway Line;
- Commonwealth Residual Land, to the east between the SIMTA site and the Wattle Grove residential area;
- Defence National Storage and Distribution Centre (DNSDC), to the north and northeast of the SMITA site.

The site to the immediate west of the SIMTA site which currently includes the SME is the subject of a Development Application (DA) (SSD-5066), under Part 4, Division 4.1 of the EP&A Act, for the development of an intermodal facility known as the Moorebank Intermodal Terminal Project (MIC Proposal). The EIS for the MIC Proposal has recently been prepared and publically exhibited on the 8th October 2014 to the 8th December 2014. A Preferred Project Report (PPR) is currently under preparation to respond to submissions received during public exhibition. The MIC Proposal has yet to be determined by the Department of Planning and Environment (DP&E).

A number of residential suburbs are located in proximity to the SIMTA Stage 1 site, including:

- Wattle Grove, located approximately 600 metres from the SIMTA Stage 1 site and 750 metres from the rail link to the east;
- Moorebank, located approximately 1,700 metres from the SIMTA Stage 1 site and more than 2,700 metres from the rail link to the north;

- Casula, located approximately 1,100 metres from the SIMTA Stage 1 site and 250 metres from the rail link to the west;
- Glenfield, located over 1,700 metres from the SIMTA Stage 1 site and 750 metres from the rail link to the south-west.

1.6 Statutory Requirements.

This assessment has been prepared having regard to the following legislative and planning requirements:

1.6.1 Legislation.

(a) Environmental Planning and Assessment Act (EPA Act)

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1997* (EPA Act). In relation to bushfire planning for new developments (including Industrial Development) in bushfire prone areas in NSW, the following section of the EPA Act applies:

- (i) Section 79C(1) states *“In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application:*
 - *The likely impacts of the development (e.g. natural hazards such as bushfire threat);*
 - *The suitability of a site for development (e.g. bushfires)*
- (ii) Section 79BA of the *Environmental Planning & Assessment Act* requires that a development comply with the specifications of *Planning for Bushfire Protection 2006*.

However, by virtue of clause 1B of Section 79BA, this section does not apply to State Significant Development. Notwithstanding, in accordance with good environmental impact assessment practice, this report has considered the provisions of Section 79BA of the EP&A Act.

(b) Rural Fires Act 1997

The objectives of the *Rural Fires Act* are to provide:

- The prevention, mitigation and suppression of fires;
- Coordination of bushfire fighting and prevention;

- Protection of people and property from fires; and
- Protection of the environment.

In relation to the management of bushfire fuels on public and private lands within NSW, Sections 63(1) and 63(2) require public authorities and owners / occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimize the danger of the spread of bushfires.

(c) *Threatened Species Conservation Act 1995 (TSC Act).*

The TSC Act aims to protect and encourage the recovery of threatened species, populations and communities as listed under the Act. The TSC Act is integrated with the EP&A Act and requires consideration of whether a development or an activity (such as the implementation of hazard reduction and asset protection) is likely to significantly affect threatened species, populations and ecological communities or their habitat.

1.6.2 Planning Policies.

Planning for Bushfire Protection – 2006 (Rural Fire Service)

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for rural residential and residential subdivision, “*Special Fire Protection Purpose*” and Class 5 – 8 and 10 buildings in bushfire prone areas.

The document provides recommendations on the provision of defensible space requirements to Class 5 – 8 and 10 buildings and access/water supply provisions for developments in bushfire prone areas. Provision for the assessment of construction standards to buildings and management / maintenance of the defensible space to buildings is also provided in the document.

1.7 Documentation Reviewed.

The following documents were reviewed in the preparation of this assessment:

- SIMTA Environmental Assessment – Transitional Part 3A Concept Application – August 2013 prepared by Urbis;
- SIMTA Hazards & Risk Assessment - Transitional Part 3A Concept Plan Application – June 2013 prepared by Hyder Consulting;
- SIMTA Intermodal Terminal Facility Stage 1 Preliminary Environmental Assessment and Request for Secretary’s Environmental Assessment Requirements prepared by Hyder Consulting – October 2014;

- SIMTA Intermodal Terminal Facility Environmental Assessment (Commonwealth EIS) prepared by Hyder Consulting – September 2013;
- Demolition Plan prepared by Reid Campbell – Project No. 112110, Drawing No. A1003p dated 08.12.2014;
- Secretaries Environmental Assessment Requirements – SSD14- 6766
- Proposed Overall Site Plan (Stage 1) prepared by Reid Campbell – Project No. 112110, Drawing No. A0004p dated 08.12.2014;
- IMEX Stage 1 Terminal Plan – Detail Plan prepared by Reid Campbell – Project No. 112110, Drawing No. A0005.1p dated 08.12.2014
- Aerial Photograph of the site;
- Liverpool Council Certified Bushfire Prone Land Map;
- *Planning for Bushfire Protection 2006* prepared by the NSW Rural Fire Service.

1.8 Site Inspection.

Graham Swain of *Australian Bushfire Protection Planners Pty. Limited* inspected the development property on the 18th December 2014 to assess the topography, slopes, vegetation classification and land use within and adjoining the development site.

Visual assessment was undertaken to determine likely fire runs, influence of terrain on wind patterns within the bushfire prone vegetation and an assessment of the access and egress to the development site.

SECTION 2

DESCRIPTION OF DEVELOPMENT SITE

2.1 Location & Description.

The SIMTA Stage 1 site occupies the former DNSDC land within Lot 1 in DP 1048263, Moorebank Avenue, Moorebank.

The construction of the rail link also includes the following land:

- Part of Commonwealth lands between the SIMTA site and the East Hills Rail Line;
- Railway land including within the East Hills Rail Line Corridor;
- Privately owned land north of the East Hills Rail Line, east of the Main South Rail Line and Southern Sydney Freight Line and west of the Georges River (including Glenfield Waste Facility);
- Land west of the Georges River, north of the above privately owned land;
- Railway land along shared railway line – Main South Rail Line and Southern Sydney Freight Line corridor.

Refer to Figure 1 on Page 10.

2.2 Land Use Adjoining the SIMTA Stage 1 Site.

The SIMTA Stage 1 site occupies the land in the south-western corner of the larger SIMTA site and is therefore adjoined to the north and east by the former DNSDC buildings.

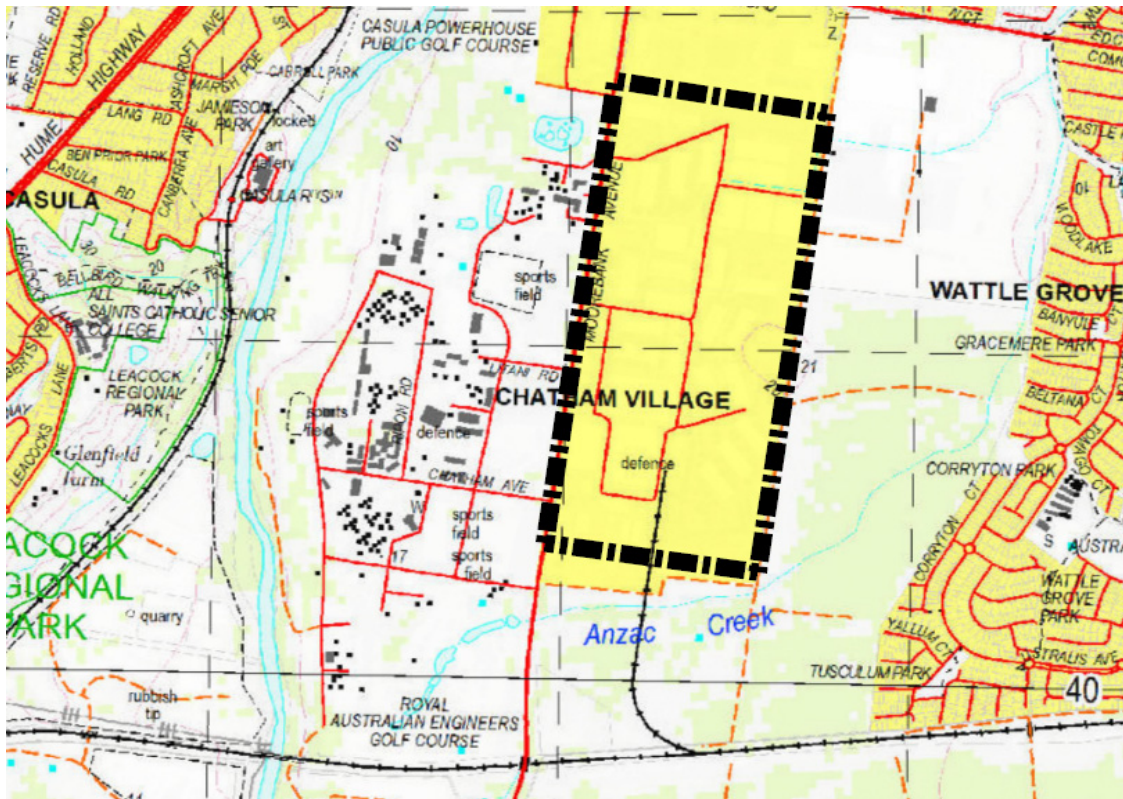
The land to the south of the SIMTA Stage 1 site is vacant Commonwealth land. The land to the west forms the Moorebank Avenue carriageway beyond which is the MIC site (former School of Military Engineering) – refer to Figure 1 on Page 10.

2.3 Topography.

Appendix 2 of *Planning for Bushfire Protection 2006* states that slopes should be assessed, over a distance of at least 100m from a development site and that the gradient of the land should be determined which will most significantly influence the fire behaviour on the site. The land within SIMTA site is level.

Except for a gradual fall towards the Anzac Creek corridor, the surrounding land is also level.

Figure 2 – Topographic Map of the SIMTA site and surrounding land.



2.4 Vegetation.

Appendix A2.3 of *Planning for Bushfire Protection 2006* provides a methodology for determining the predominant bushfire prone vegetation for at least 140 metres in all directions from the proposed building.

Vegetation is classified using Table A2.1 of *Planning for Bushfire Protection 2006*, which classifies vegetation types into the following groups:

- (a) Forests (wet & dry sclerophyll forests);
- (b) Woodlands;
- (c) Plantations – being pine plantations not native plantations;
- (d) Forested Wetlands;
- (e) Tall Heaths;
- (f) Freshwater Heaths;
- (g) Short Heaths;
- (h) Alpine Complex;
- (i) Semi – arid Woodlands;
- (j) Arid Woodlands; and
- (k) Rainforests.

The development site contains managed landscaped gardens.

2.4.1 Vegetation Communities adjoining the SIMTA Stage 1 Site.

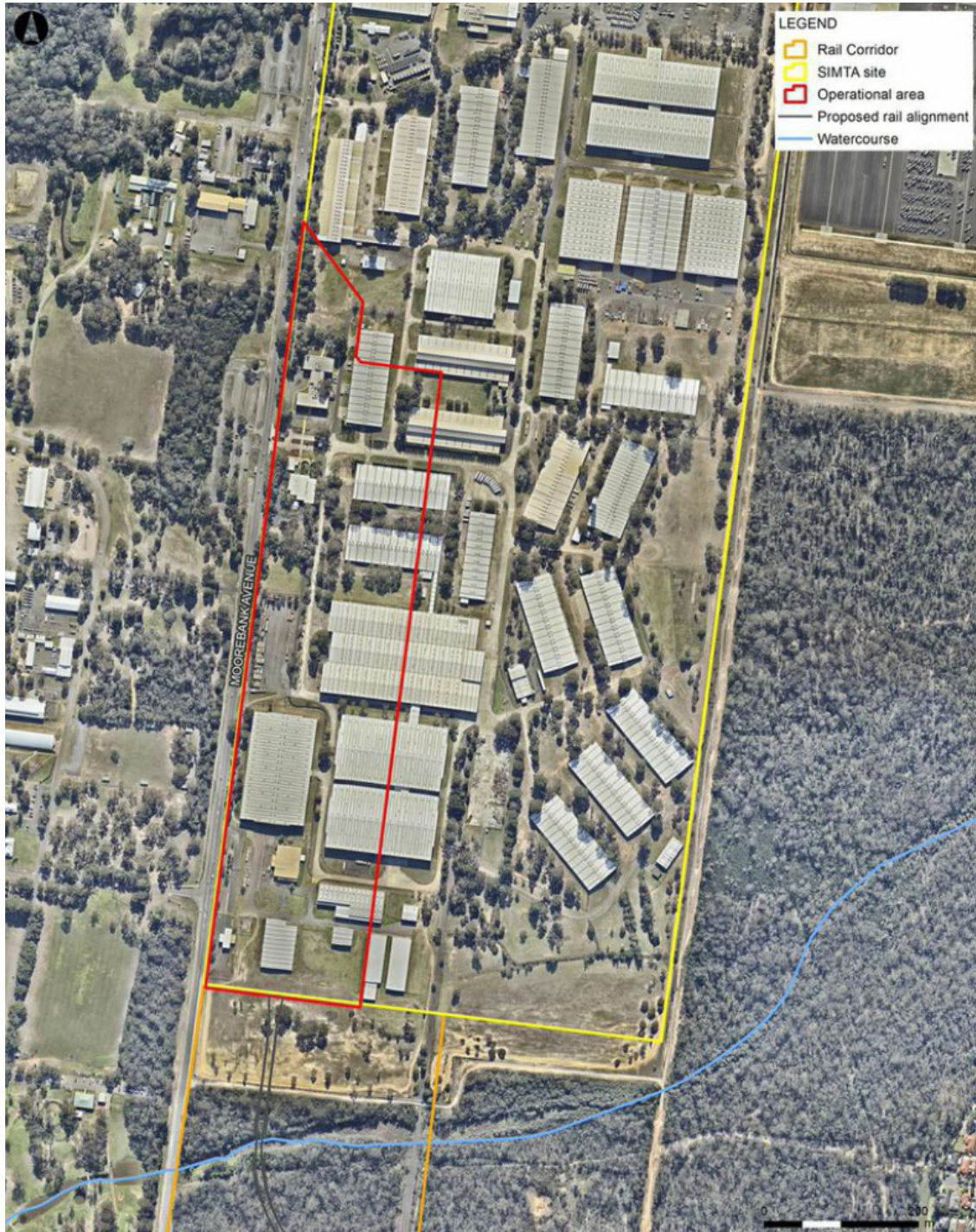
The vegetation on the land to the east of the SIMTA Stage 1 site consists of managed landscaped gardens within the wider SIMTA site.

The Commonwealth land to the south contains a wide area of managed land which is slashed. Beyond the existing compound fence, the existing fire/access trail is cleared with Castlereagh Scribbly Gum Woodland and Castlereagh Swamp Woodland extending to the south, beyond the fire/access track. For the purpose of determining bushfire protection measures this vegetation is classified as forest due to the density of the shrubs and interlocking canopies.

Moorebank Avenue to the west contains a managed road verge. Beyond the road corridor the land contains existing development with managed land, including Playing Fields, Ovals and a Golf Course. A narrow corridor of remnant forest vegetation varying in width forms a privacy screen to the existing landuse.

Refer to Figure 3 Aerial Photograph on Page 19 showing the vegetation on the land adjoining the SIMTA site.

Figure 3 – Aerial Photograph of the SIMTA site showing the vegetation on the adjoining land.



2.6 Significant Environmental Features on the land within the SIMTA Stage 1 Site.

The Stage 1 site does not contain any significant environmental features such as SEPP 14 – Coastal Wetlands; SEPP 26 Littoral Rainforests; SEPP 44 – Koala Habitat; Areas of Geological interest; Steep Lands (>18 degrees); Land slip areas, National Parks Estate or riparian corridors.

2.7 Known Threatened Species, Populations, Endangered Ecological Communities or Critical Habitat on the land within the SIMTA Stage 1 Site.

As the Stage 1 site has been cleared of native vegetation, there are no known threatened species, populations, endangered ecological communities or critical habitat on the site. There is a presence of potential habitat for both the Eastern Bentwing-bat (Vulnerable under the Threatened Species Conservation Act 1995 (TSC Act)) and the Grey-headed Flying-fox (Vulnerable under TSC Act and Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)). Refer to Biodiversity Assessment Report (Hyder, 2015) prepared for the proposal.

2.8 Details of Aboriginal / European Heritage within the SIMTA Stage 1 Site.

No known items of Aboriginal significance are located on the Stage 1 site.

The Stage 1 site (and SIMTA site) is known collectively as the Defence National Storage and Distribution Centre (DNSDC), which is currently listed on the Commonwealth Heritage List (CHL) and is protected under the EPBC Act. Refer to the Non-Indigenous Heritage Assessment [Artefact, 2015) prepared for the proposal.

SECTION 3

BUSHFIRE HAZARD ASSESSMENT

3.1 Definitions.

Planning for Bushfire Protection 2006 defines *Bushfire Hazard* as the “potential severity of a fire” and is usually measured in terms of intensity (kW/m) with the factors influencing a bushfire hazard being climate and weather patterns, fuel (quantity, distribution and moisture content) and the effective slope of the land.

Planning for Bushfire Protection 2006 defines bushfire risk as “the chance of a bushfire igniting, spreading and causing damage to assets of value to the community. Risk may be rated as extreme, major, moderate, minor or insignificant and is related to the vulnerability of the asset”.

3.2 Precinct Level Assessment of Bushfire Prone Vegetation.

Planning for Bushfire Protection 2006 provides the following procedure for assessing a development at a defined precinct level in order to determine whether the development is bushfire prone and if so, the need to provide appropriate setbacks:

(a) *Determine vegetation distance, type and class as follows:*

Identify all vegetation in each direction from the site for a distance of 140 metres, and then consult Table A2.1 to determine the vegetation formation which predominates.

(b) *Determine the average slope of the land between the predominant vegetation class and the development:*

Table 3 summarises the information provided in Section 2 to undertake a precinct level assessment to determine those aspects of the development deemed to be prone to bushfire threat and therefore subject to the provision of Asset Protection Zones / Defendable Spaces.

Table 3. Precinct Level Assessment – SIMTA Stage 1 Site

Aspect	Existing Land Use	Vegetation within 140 m of Development	Predominant formation class	Effective Slope of land to distance of 100m.	Comments
North & east	Existing development	Managed curtilage	Nil	Not Applicable – not bushfire prone vegetation	The northern and eastern aspects to the Stage 1 site do not contain bushfire prone vegetation within 140m of the site.
South	Managed & unmanaged vacant land	Slashed grassland & Dry Sclerophyll Low Open Forest	Forest	< 5 degrees downslope to the south & southeast	The southern aspect to the Stage 1 site contains bushfire prone vegetation.
West	Existing development	Managed curtilage & isolated pockets of vegetation	Remnant Forest in isolated pockets	Level	The western aspect to the Stage 1 site contains small pockets of unmanaged bushfire prone vegetation.

3.3 Bushfire Hazard Assessment.

Planning for Bushfire Protection 2006 does not provide a methodology for determining bushfire hazard – it defers instead to Bushfire Prone Land determined in accordance with the “*Bushfire Prone Land Mapping Guideline*”, issued by the Rural Fire Service on the 7th April 2004. To be able to undertake a bushfire hazard assessment the *Department of Planning* document *Circular C10 (1983)* provides a suitable methodology. This methodology rates the vegetation and slope and provides an index value to each.

The overall Bushfire Hazard Score (low, medium and high) is determined by multiplying the Vegetation Index by the Slope Index.

3.3.1 Assessment to Determine the Bushfire Hazard to the Development.

The vegetation that presents the potential bushfire threat to the development is the Dry Sclerophyll Low Open Forest on the vacant land to the south of the SIMTA Stage 1 site and the vegetation beyond the Moorebank Avenue road corridor, to the west. It is noted that the land to the west of Moorebank Avenue is subject to a separate Development Application for the MIC Intermodal Terminal. In the event that the MIC proposal is approved (and proceeds) it is likely that the majority of the vegetation in this area would be cleared.

The Dry Sclerophyll Forest vegetation has a vegetation index score of 2.8.

The < 5 degrees effective slope on the vacant land containing the bushfire prone vegetation to the south has a slope index score of 2.0. Therefore the Bushfire Hazard Score for the forest vegetation on the land to the south is $2.8 \times 2.0 = 5.6$, which equates to a numerical Bushfire Hazard Rating of high.

The remnant vegetation on the land to the west of Moorebank Avenue is not contiguous with a large area of bushfire prone vegetation which could be involved in a fire spread from the northwest, west or southwest – the primary direction for severe/catastrophic bushfires. The Bushfire Hazard Rating for this vegetation is low.

3.4 Assessment of Bushfire Threat.

Bushfire Threat is the “*measure of scale of impact or significance in terms of hazard and risk*”.

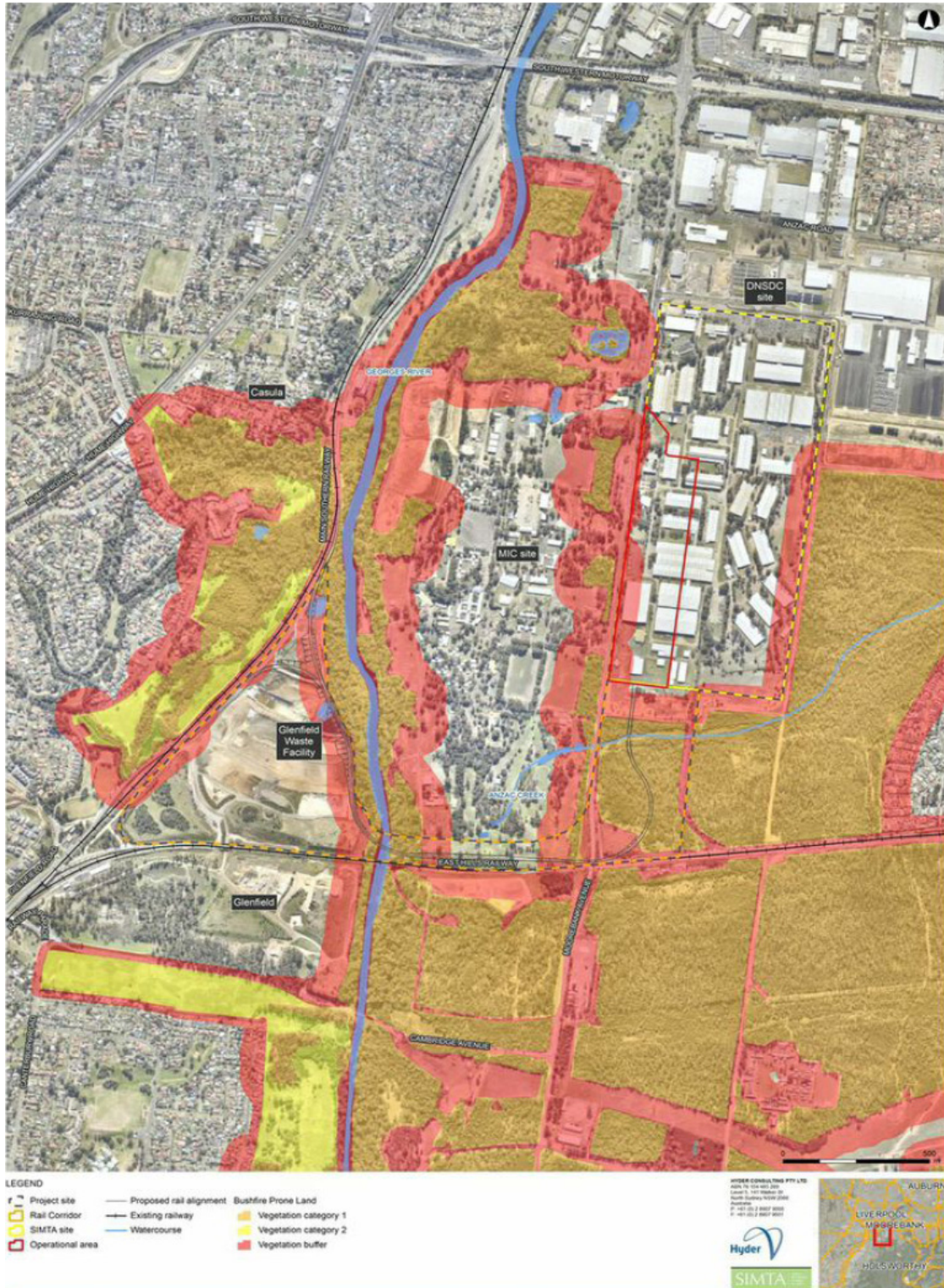
The bushfire threat to the SIMTA Stage 1 Site, from the vegetation on the land to the south is deemed to be moderate with the continued management (slashing) of the adjoining land. Should this activity cease, the hazard will increase to high.

3.5 Bushfire Prone Land Map.

Pursuant to Section 146 of the *Environmental Planning & Assessment Act 1979* Liverpool Council has prepared a Bushfire Prone Land Map in accordance with the NSW Rural Fire Service’s ‘*Guideline for Bushfire Prone Land Mapping 2006*’.

Figure 4 on Page 24 provides a copy of an extract from the map certified by the Commissioner of the NSW Rural Fire Service as being a map which identifies the extent of Category 1 Bushfire Prone Vegetation on the land adjoining the SIMTA site and the affectation, on the SIMTA site, of the 100 metre wide buffer zone to the bushfire prone vegetation.

Figure 4 – Extract of the Certified Liverpool Bushfire Prone Land Map showing the location of the SIMTA Stage 1 Site.



SECTION 4

BUSH FIRE PROTECTION ASSESSMENT

4.1 Introduction.

Chapter 1, Section 1.3 of *Planning for Bushfire Protection 2006* states that the construction of Class 5 – 8 and Class 10 buildings on bushfire prone land, or land impacted by bushfire prone vegetation, must meet the aim and objectives of the document.

The stated aim of the document is to use the NSW development assessment system to provide for protection of human life (including fire-fighters) and to minimize impacts on property from the threat of bushfire, while having due regard to development potential, on-site amenity and protection of the environment.

The objectives of the document are:

- (1) *Afford occupants of any building adequate protection from exposure to the impacts of a bushfire;*
- (2) *Provide for a defensible space to be located around buildings;*
- (3) *Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;*
- (4) *Ensure that safe operational access/egress for emergency service personnel and occupants relocating is provided and/or available;*
- (5) *Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads within the Asset Protection Zone/s;*
- (6) *Ensure that utility services are adequate to meet the needs of fire-fighters (and others assisting in bushfire fighting operations).*

Chapter 4, Section 4.3.6(f) of *Planning for Bushfire Protection 2006* discusses the bushfire protection to buildings of Class 5 to 8 and 10b of the Building Code of Australia and states:

“The BCA does not provide for any bushfire specific performance requirements and as such A.S.3959 – 1999 does not apply as a set of ‘deemed to satisfy provisions’.

The general fire safety construction provisions for this class of building are taken as acceptable solutions, but the aim and objective of Planning for Bushfire Protection 2006 apply in relation to access and water supply for fire-fighting operations, emergency planning (evacuation) and landscaping / vegetation management”.

4.2 Bushfire Protection Assessment for the proposed SIMTA Stage 1 development:

The performance criteria for the proposed development are:

(1) *Afford occupants of any building adequate protection from exposure to the impacts of a bushfire:*

The proposed SIMTA Stage 1 development consists of a Container Storage and Handling facility which has the fixed assets (Office & Administration Area) located more than 700 metres from the bushfire hazard on the land to the south.

This separation is provided by the management of the land adjacent to the southern boundary plus the Container Storage/Handling Area. The Containers are loaded and unloaded onto/off trains and trucks and therefore are not fixed assets.

The Office and Administration Area is located more than 35 metres clear of the pockets of unmanaged vegetation on the land to the west of Moorebank Avenue.

These setbacks afford the occupants of the facility adequate protection from a bushfire event which may occur in the vegetation to the south and the unlikely event of a fire in the vegetation on the land to the west of Moorebank Avenue.

(2) *Provide for a defensible space to be located around buildings:*

The defensible space to the south of the Office and Administration Area is more than 700 metres and more than 35 metres to the west.

The management of the adjoining land to the south of the Container Storage area provides a defensible space to this part of the SIMTA Stage 1 Site of more than 100 metres.

(3) Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition:

The setbacks to the fixed assets (Office and Administration Area) remove the chance of direct flame contact on the building/s.

The management of the land to the south provides a separation of more than 100 metres between the southern boundary of the SIMTA Stage 1 Site and the unmanaged vegetation on the Commonwealth land. This separation removes the chance of direct flame contact on the Container Storage area within the SIMTA Stage 1 Site.

(4) Ensure that safe operational access/egress for emergency service personnel and occupants relocating, is provided and/or available:

❖ Public Roads:

The development site is accessed from Moorebank Avenue is a Local Road where it meets the site and a State Road above the M5 Motorway and provides safe operational access/egress for emergency service personnel and occupants of the facility.

❖ Fire Trail Access.

No fire trail access provided or required – refer to *Emergency Response Access/Egress* below. The design layout for the SIMTA Stage 1 Site provides a fire service access to the eastern aspect of the complex.

❖ Emergency Response Access / Egress.

The design layout for the SIMTA Stage 1 Site provides for a fire service access to the eastern perimeter of the complex. Internal fire service access is provided utilising the truck loading access roads.

An Emergency exit is provided from the south-western corner of the complex, onto Moorebank Avenue.

The emergency access/egress within the development site provides safe operational access for emergency service personnel and safe egress is available for emergency service personnel and staff and satisfies item (iv) of the Objectives of *Planning for Bushfire Protection 2006*.

(5) Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads within the Asset Protection Zones/Defendable Space:

The landscaping within the SIMTA Stage 1 Site consists of the provision of an 18 metre wide Landscape zone along the Moorebank Avenue frontage and a 6 metre wide landscaped batter along the eastern aspect of the precinct.

This vegetation shall be maintained to reduce the combustible ground fuels (leaf litter, bark and twigs).

(6) Ensure that utility services are adequate to meet the needs of fire-fighters (and others, assisting in bushfire fighting operations):

An existing reticulated water supply, with hydrants, is located within Moorebank Avenue an onsite fire-fighting water supply to be installed to comply with A.S. 2419.1 - 2005, providing a satisfactory fire-fighting water supply to the complex.

(7) Emergency Management for Fire Protection / Evacuation:

The evacuation of the SIMTA Stage 1 complex, due to the threat of a bushfire occurrence in the unmanaged vegetation to the south and west will not be required as the width of the defendable spaces removes the likelihood of flame contact and high levels of radiant heat impact on the fixed assets, stored containers and handling equipment.

4.3 Rail Link:

The rail link is proposed to be located within the unmanaged vegetation on the land to the south of the SIMTA Stage 1 Site, extending along and adjacent to the East Hills Rail Line corridor, across the Georges River and along the western side of the Georges River.

The new rail link would be constructed within a 20 metre wide corridor. Adequate vehicular access provided to the rail link.

The bushfire threat to the fixed assets within the rail link is considered to be low however there is a risk that ignition of adjoining bushfire may occur from sparks given off by rail cars. The full width of the rail link should therefore be maintained in a low fuel state with protocols developed for the monitoring of train access/egress during high – catastrophic fire weather days. A risk assessment shall be prepared with fire-fighting resources provided where/when there is a high risk of ignition of adjoining bushland during high – catastrophic fire weather days.

SECTION 5

CONCLUSION

Item 15 Bushfire Management of the Secretary's Environmental Assessment Requirements (SSEARs) requires that an assessment be undertaken against '*Planning for Bushfire Protection 2006*'.

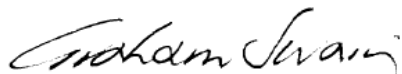
This report has examined the SIMTA Stage 1 Proposal against the requirements of *Planning for Bushfire Protection 2006* in relation to the provision of bushfire protection measures to the establishment of a truck processing and loading areas; rail loading and container storage; construction of an administration facility with associated parking and the establishment of a rail link connection to the Southern Sydney Freight Line (SSFL).

The report has found that the aim and objectives of *Planning for Bushfire Protection 2006* have been satisfactorily addressed.

Table 4 below provides a summary of compliance with the specific objectives provided by *Planning for Bushfire Protection 2006*.

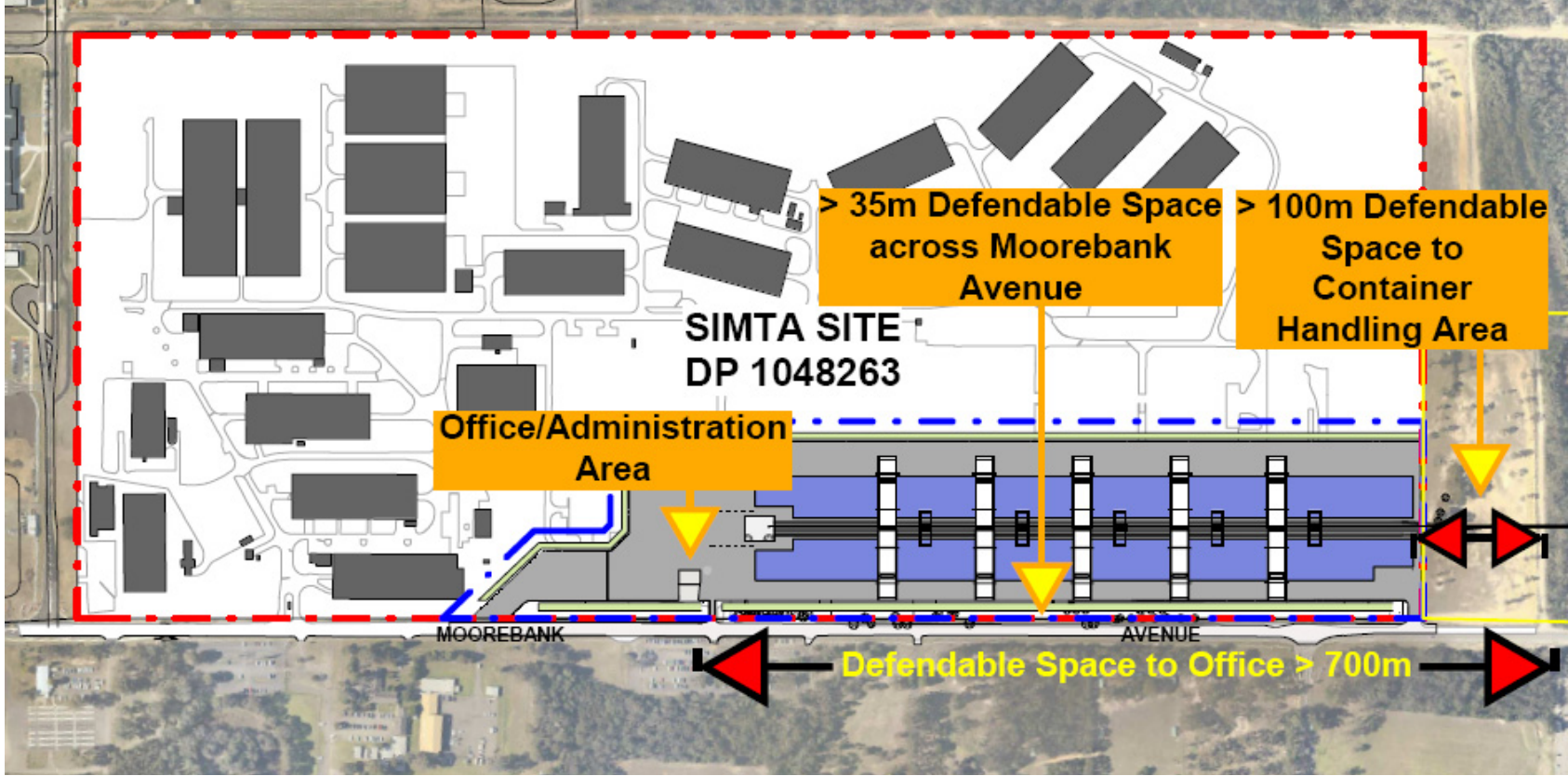
Table 4. Compliance with the specific objectives of *Planning for Bushfire Protection 2006*.

Objective	Compliance with deemed-to-satisfy provisions of <i>Planning for Bushfire Protection 2006</i> .
Afford occupants of any building adequate protection from exposure to a bushfire.	The separation between the fixed assets and the bushfire prone vegetation exceeds the defendable space widths required by <i>Planning for Bushfire Protection 2006</i> . The defendable space provided by the management of the adjoining land to the south of the container handling area removes the risk of flame contact, high levels of radiant heat and ember attack.
Provide for a defendable space to be located around the building	A defendable space greater than 700 metres is provided to the south and 35 metres to the west of the office and administration area.
Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent direct flame contact and material ignition.	The width of the defendable space provided between the fixed assets and the bushfire prone vegetation removes the possibility of flame contact and high levels of radiant heat impact on the building.
Ensure that safe operational access and egress for emergency service personnel and residents is available.	Safe, alternate egress from the SIMTA Stage 1 site is provided onto Moorebank Avenue.
Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in Asset Protection Zones.	Management of the landscaped areas within the SIMTA Stage 1 Site would be undertaken by the operators to maintain minimum dry fuels loads.
Ensure that utility services are adequate to meet the needs of fire-fighters and others assisting in bushfire fighting.	Utility services meet the needs of fire-fighting requirements.



Graham Swain,
Managing Director,
Australian Bushfire Protection Planners Pty Ltd

ATTACHMENT A – Plan showing the Defendable Spaces to the fixed assets (Office/Administration Area) and container handling area.



REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection 2006*;
- *Environmental Planning & Assessment Act – 1979*;
- *Rural Fires Act – 1997*;
- *Rural Fires and Environmental Assessment Legislation Amendment Act 2002*;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2006*;
- *Threatened Species Conservation Act 1995*;
- *Native Vegetation Act*;
- *Bushfire Environmental Assessment Code 2006*;
- Building Code of Australia;
- Australian Standard A.S 3959-2009 “*Construction of Buildings in Bushfire Prone Areas*”;
- *Liverpool Bushfire Prone Land Map*.