

Moorebank Precinct West (MPW) – Stage 2 Proposal

Bushfire Protection Assessment



SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

Part 4, Division 4.1, State Significant
Development

BUSHFIRE PROTECTION ASSESSMENT

FOR THE

**MOOREBANK INTERMODAL
COMPANY (MIC)**

MOOREBANK PRECINCT WEST – STAGE 2

MOOREBANK AVENUE,

MOOREBANK



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Report Number	Document	Preparation Date	Issue Date	Directors Approval
B152598 - 3	Final	29.3.2016	29.7.2015	<i>G.L.Swain</i>

EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited has been commissioned by *Arcadis*, on behalf of SIMTA, to prepare a report to provide advice on the bushfire protection measures required for the proposed construction of the Moorebank Precinct West Project Stage 2, Moorebank Avenue, Moorebank.

On the 3 June 2016 Concept Plan Approval (SSD 5066) was granted, under Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), to develop the Moorebank Precinct West Project (MPW Project) on the western side of Moorebank Avenue, Moorebank, in south-western Sydney (the MPW site).

The MPW Project involves the development of intermodal freight terminal facilities (IMT), linked to Port Botany, the interstate and intrastate freight rail network. The MPW Project includes associated commercial infrastructure (i.e. warehousing), a rail link connecting the MPW site to the Southern Sydney Freight Line (SSFL), and a road entry and exit point from Moorebank Avenue.

Under the Concept Plan Approval, the MPW Project is to be developed in four phases, being:

- ❖ Early Works development phase, comprising:
 - The demolition of existing buildings and structures
 - Service utility terminations and diversion/relocation
 - Removal of existing hardstand/roads/pavements and infrastructure associated with existing buildings
 - Rehabilitation of the excavation/earthmoving training area (i.e. 'dust bowl')
 - Remediation of contaminated land and hotspots, including areas known to contain asbestos, and the removal of:
 - Underground storage tanks (USTs)
 - Unexploded ordnance (UXO) and explosive ordnance waste (EOW) if found
 - Asbestos contaminated buildings
 - Archaeological salvage of Aboriginal and European sites
 - Establishment of a conservation area along the Georges River
 - Establishment of construction facilities (which may include a construction laydown area, site offices, hygiene units, kitchen facilities, wheel wash and staff parking) and access, including site security
 - Vegetation removal, including the relocation of hollow-bearing trees, as required for remediation and demolition purposes.

- ❖ Development of the intermodal terminal (IMT) facility and initial warehousing facilities;
- ❖ 'Ramp up' of the IMT capacity and warehousing;
- ❖ Development of further warehousing.

Approval for the Early Works phase (MPW Concept Plan Approval) was granted as the first stage of the MPW Project within the Concept Plan Approval. Works, approved as part of this stage are anticipated to commence in the third quarter of 2016.

Commonwealth Approval (No. 2011/6086), under the *Environmental Protection Biodiversity Conservation Act 1999* (EPBC Act), was also granted in mid 2016 (soon after the Concept Plan Approval) for the MPW Project. In addition to this, the Planning Proposal (PP_2012_LPOOL_004_00) which provided a rezoning of part of the MPW site, and surrounds, was gazetted on 24 June 2016 into the *Liverpool Local Environmental Plan 2008* (Amendment No. 62).

On 5 December 2014, Moorebank Intermodal Terminal Company (MIC) and SIMTA announced their in-principle agreement to develop the Moorebank IMT Precinct on a whole of precinct basis. This agreement is subject to satisfying several conditions which both parties are currently working towards. SIMTA is therefore seeking approval to build and operate the IMT facility and warehousing under the MPW Project Concept Approval, known as the MPW Stage 2 Proposal (the Proposal).

The MPW Stage 2 Proposal (the Proposal) involves the construction and operation of an Intermodal terminal (IMT) facility and associated warehousing.

The IMT facility would have the necessary infrastructure to support a container freight throughput volume of 500,000 twenty-foot equivalent units (TEUs) per annum. Specifically, the IMT facility within the Proposal site would include the following key components:

- ❖ Truck processing, holding and loading areas – with entrance and exit from Moorebank Avenue via an upgraded intersection and a round-about to distribute traffic between the warehousing precinct and the IMT;
- ❖ Rail loading and container storage areas – installation of nine rail sidings, with an adjacent container storage area serviced by manual handling equipment;
- ❖ Administration facility – office building with associated car parking and light vehicle access from Moorebank Avenue;

- ❖ The Rail link connection – rail sidings within the IMT facility, which would be linked (to the south) to the Rail link (constructed as part of the MPE Project (SSD 14-6766)).

Also included within the Proposal are the following key components:

- ❖ Warehousing area – construction and operation of approximately 215,000 m² GFA of warehousing, with warehouses ranging in size from 4,000 m² to 71,000 m². Included within the warehousing area would be ancillary offices, truck and light vehicle parking, associated warehouse access roads;
- ❖ Freight village – construction and operation of approximately 800 m² of retail premises, with access from the internal road;
- ❖ Upgraded intersection on Moorebank Avenue and internal road – including works to Moorebank Avenue, Anzac Road to accommodate the proposed site entrance to Moorebank Avenue, and construction of an internal road;
- ❖ Ancillary works – including vegetation clearing, earth works, drainage and on-site detention, utilities installation/connection, signage and landscaping.

The Proposal site is generally bounded by the Georges River to the west, Moorebank Avenue to the east, the East Hills Railway Line to the south and the M5 Motorway to the north. The MPW site is located on Moorebank Avenue, Moorebank and forms Lot 1 in Deposited Plan [DP] 1197707¹, which is wholly owned by the MIC and leased by SIMTA.

The Proposal site is impacted by the Liverpool Bushfire Prone Land Map which shows that Category 1 Bushfire Prone Vegetation occupies pockets of land within the Proposal site and along the western, Georges River boundary.

Based on the above, Section 79BA of the *EP&A 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 Proposal, containing the proposed Rail link connection and Rail link [approved under MPE Stage 1], 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 *EP&A 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.

¹Previously legally described as Lot 3001 in DP 1125930 in the MPW Concept Plan Approval [SSD 5066].

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 Planning for Bushfire Protection (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 “defensible 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 defensible 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 Proposal and the separation to bushfire prone vegetation provide that the site is suitable in terms of its intended use.

I 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.
29.07.2016

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SECTION 1

INTRODUCTION

1.1 Background

The MPW Project involves the development of intermodal freight terminal facilities (IMT), linked to Port Botany, the interstate and intrastate freight rail network.

The MPW Project includes associated commercial infrastructure (i.e. warehousing), a rail link connecting the MPW site to the Southern Sydney Freight Line (SSFL), and a road entry and exit point from Moorebank Avenue.

This report has been prepared for approval of Stage 2 of the MPW Project [the Proposal]. A summary of the works included in the Proposal is provided in Section 1.4 on Page 12.

This report has been prepared to support the Environmental Impact Statement (EIS) for approval of the Proposal.

This report has been prepared as part of 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 16-5066 and dated 3rd June 2016) and revised environmental mitigation measures (REMMs) identified in the Concept Plan Approval (SSD_5066).

Table 1 provides a summary of the SEARs and the section where they have been addressed in this report.

Table 1 SEARs (SSD_5066) compliance table

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

1.2 Aim of this Assessment.

The aim of this Bushfire Protection Assessment is to address the requirements of the SEARS; the provisions of Section 79BA of the *Environmental Planning & Assessment Act 1979 (EP&A Act)* and *Planning for Bushfire Protection 2006* and in doing so:

- Determine the formation of the vegetation on and surrounding the Proposal 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 Proposal site;
- Undertake a Bushfire Protection Assessment to determine bushfire protection strategies for the Proposal 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 Proposal Summary and Key Terms which are included within this report.

Figure 1 provides an indication of the site areas discussed in this table.

Table 2. Proposal Summary & Key terms

TERM	DEFINITION
Moorebank Precinct West (MPW) Concept Plan Approval (Concept approval and Early Works)	MPW Concept Plan and Stage 1 Approval (SSD 5066) granted on 3 June 2016 for the development of the MPW Intermodal terminal facility at Moorebank and the undertaking of the Early Works. Granted under Part 4, Division 4.1 of the <i>Environmental Planning and Assessment Act 1979</i> . This reference also includes associated Conditions of Approval and Revised Environmental Management Measures, which form part of the documentation for the approval. N.B. Previously the MIC Concept Plan Approval
Moorebank Precinct West (MPW) EPBC Approval	Commonwealth Approval (No. 2011/6086), granted in mid-2016 under the <i>Environmental Biodiversity Protection Conservation Act 1999</i> , for the impact of the MPW Project on listed threatened species and communities and impacts on the environment by a Commonwealth agency.
Moorebank Precinct West (MPW) Concept Plan EIS	The Environmental Impact Statement prepared to support the application for approval of the MPW Concept Plan and Early Works (Stage 1) under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> and the <i>Environmental Planning and Assessment Act 1979</i> . N.B. Previously the MIC Concept Plan EIS
Revised Environmental Management Measures (REMMs)	The environmental management measures for the MPW Concept Plan Approval as presented within the MIC Supplementary Response to Submissions (SRtS) (PB, 2015) and approved under the MPW Concept Plan Approval.
Moorebank Precinct West (MPW) Planning Proposal	Planning Proposal (PP_2012_LPOOL_004_00) to rezone the MPW site from 'SP2- Defence to 'IN1- Light Industrial' and 'E3- Management', as part of an amendment to the <i>Liverpool Local Environmental Plan 2008</i> (as amended) gazetted on 24 June 2016.
Moorebank Precinct West (MPW) Project	The MPW Intermodal Terminal Facility as approved under the MPW Concept Plan Approval (5066) and the anticipated MPW EPBC Approval (2011/6086). N.B. Previously the MIC Project
Moorebank Precinct West (MPW) site	The site which is the subject of the MPW Concept Plan Approval, MPW EPBC Proposal and MPW Planning Proposal (comprising Lot 1 DP1197707 and Lots 100, 101 DP1049508 and Lot 2 DP 1197707). The MPW site does not include the rail link as referenced in the MPW Concept Plan Approval or MPE Concept Plan Approval. N.B. Previously the MIC site.
Early Works	Works approved under Stage 1 of the MPW Concept Plan Approval (SSD 5066), within the MPW site, including: establishment of construction compounds, building demolition, remediation, heritage impact mitigation works and establishment of the conservation area.
Early Works Approval	Approval for the Early Works (Stage 1) component of the MPW Project under the MPW Concept Plan Approval (SSD 5066) and the (yet to be granted) MPW EPBC Approval. Largely contained in Schedule 3 of the MPW Concept Plan Approval.
Early Works area	Includes the area of the MPW site subject to the Early works approved under the MPW Concept Plan Approval (SSD 5066).

Proposal	MPW Stage 2 Proposal (the subject of this EIS), namely Stage 2 of the MPW Concept Plan Approval (SSD 5066) including construction and operation of an IMT facility, warehouses, a Rail link connection and Moorebank Avenue/Anzac Road intersection works.
Proposal site	The subject of this EIS, the part of the MPW site which includes all areas to be disturbed by the MPW Stage 2 Proposal (including the operational area and construction area).
IMT facility	The Intermodal terminal facility on the Proposal site, including truck processing, holding and loading areas, rail loading and container storage areas, nine rail sidings, loco shifter and an administration facility and workshop.
internal road	Main internal road through the Proposal site which generally travels along the western perimeter of the site. Provides access between Moorebank Avenue and the IMT and warehouses.
Rail link connection	Rail connection located within the Proposal site which connects to the Rail link included in the MPE Stage 1 Proposal (SSD 14-6766).
Proposal operational rail line	The section of the Rail link connection and Rail link between the SSFL and the Rail link connection (included in the MPE Stage 1 Proposal) to be utilised for the operation of the Proposal.
construction area	Extent of construction works, namely areas to be disturbed during the construction of the Proposal.
operational area	Extent of operational activities for the operation of the Proposal.
Moorebank conservation area/conservation area	Vegetated area to remain to the west of the Georges River, to be subject to biodiversity offset, as part of the MPW Project.
Moorebank Precinct (MP)	Refers to the whole Moorebank intermodal precinct, i.e. the MPE site and the MPW site.
Moorebank Precinct East (MPE) Project	The Intermodal terminal facility on the MPE site as approved by the MPE Concept Plan Approval (MP 10_0913) and including the MPE Stage 1 Proposal (14-6766). N.B. Previously the SIMTA Concept Plan Approval
Moorebank Precinct East (MPE) site	The site which is the subject of the MPE Concept Plan Approval, and includes the site which is the subject of the MPE Stage 1 Approval. N.B. Previously the SIMTA site
Moorebank Precinct East (MPE) Stage 1 Proposal	MPE Stage 1 Proposal (14-6766) for the development of the Intermodal terminal facility at Moorebank. This reference also includes associated conditions of approval and environmental management measures which form part of the documentation for the approval. N.B. Previously the SIMTA Stage 1 Proposal
Rail link	Part of the MPE Stage 1 Proposal (14-6766), connecting the MPE site to the SSFL. The Rail link (as discussed above) is to be utilised for the operation of the Proposal

1.4 Proposal Overview.

The Proposal will involve the operation of the IMT facility, Rail link connection, Rail link and warehousing.

The Proposal will provide a freight transport facility to support the transport of freight by rail between Victoria, Queensland, regional NSW and Port Botany, with freight distributed through one of the following container flows:

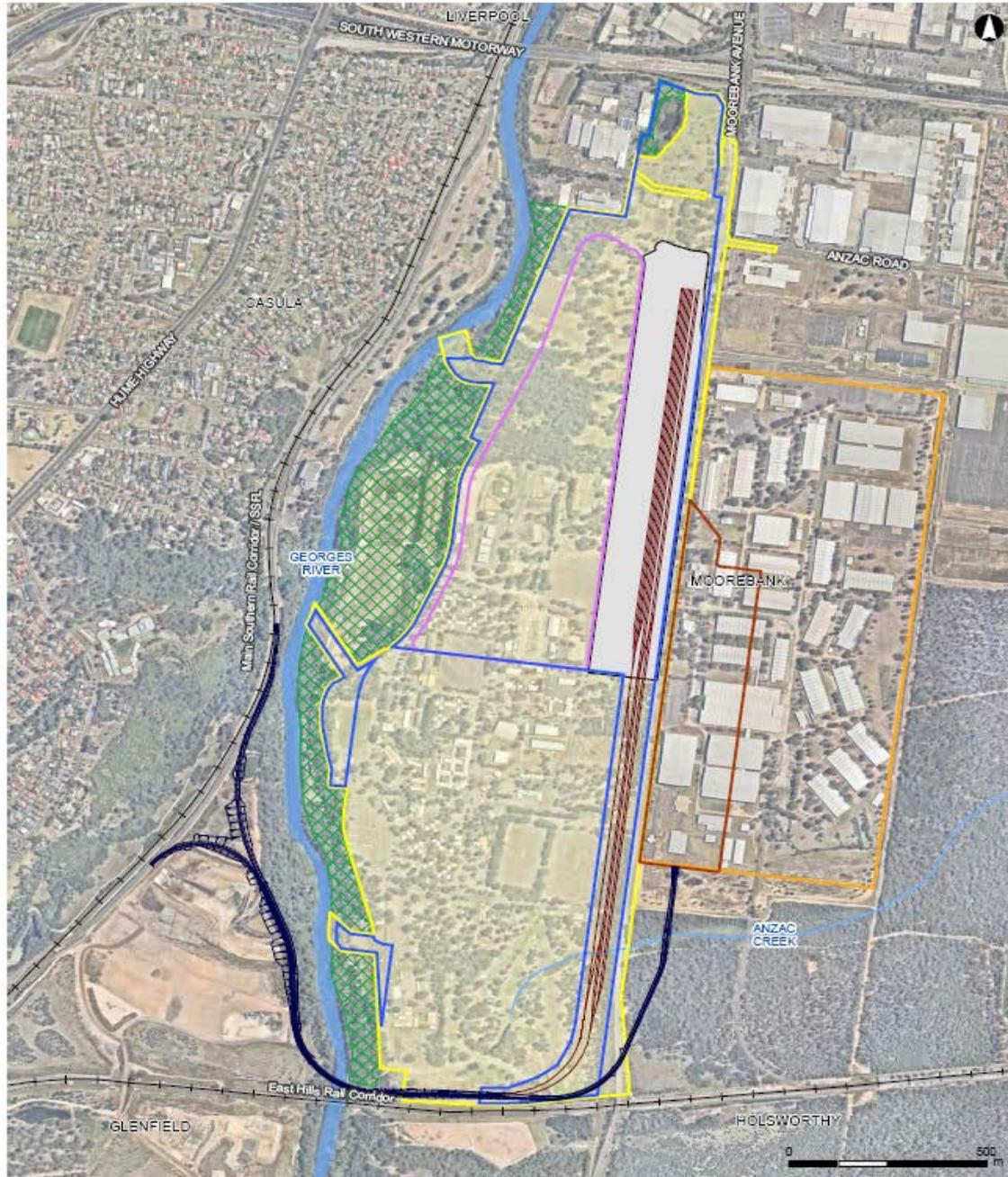
- Transferred directly between trains within the MPW Stage 2 site;
- Temporarily stored on site;
- Transferred directly to warehousing within the MPW Stage 2 site;
- Transferred directly by truck to warehousing or to the IMEX terminal within the broader Moorebank intermodal freight precinct;
- Loaded directly on to heavy vehicles for distribution to markets via the nearby major road network;

Once operational, the IMT facility would handle an annual container freight volume of 500,000 TEU.

Access (entrance and exit) to the MPW Stage 2 site for heavy and light vehicles would be via the new site access off Moorebank Avenue. Trucks accessing the warehousing area of the MPW Stage 2 site would continue to the Internal Transfer Road on the western perimeter of the site and onto the warehouse access roads to the warehousing.

The warehouses on the MPW Stage 2 site would generally be operational for 18 hours a day, and 5 to 7 days a week.

Figure 1 – Proposal Overview



LEGEND

MPW PROPOSAL	OTHER PRECINCT FEATURES
Operational area	MPE Stage 1 site
Construction area	MPE site
Warehousing footprint	IMT facility area
MPW Stage 2 site	Conservation area
MPW Rail link connection	MPE Rail link connection
	Watercourse
	Existing railway

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Proposal overview

File: 26/07/2016 Path: F:\A0347835-Adria_A_Corridor_Map\A0347835_Stage2_Fig1_ProposalOverview_A4_116_102.mxd
 Created by: GC
 QA by: SB

1.5 Construction Overview.

The Proposal involves the construction and operation of an Intermodal terminal (IMT) facility and approximately 215,000 m² gross floor area (GFA) of warehousing.

The IMT facility would have the necessary infrastructure to support a container freight throughput volume of 500,000 twenty-foot equivalent units (TEUs) per annum. Specifically, the IMT facility within the MPW Stage 2 Proposal site would include the following key components:

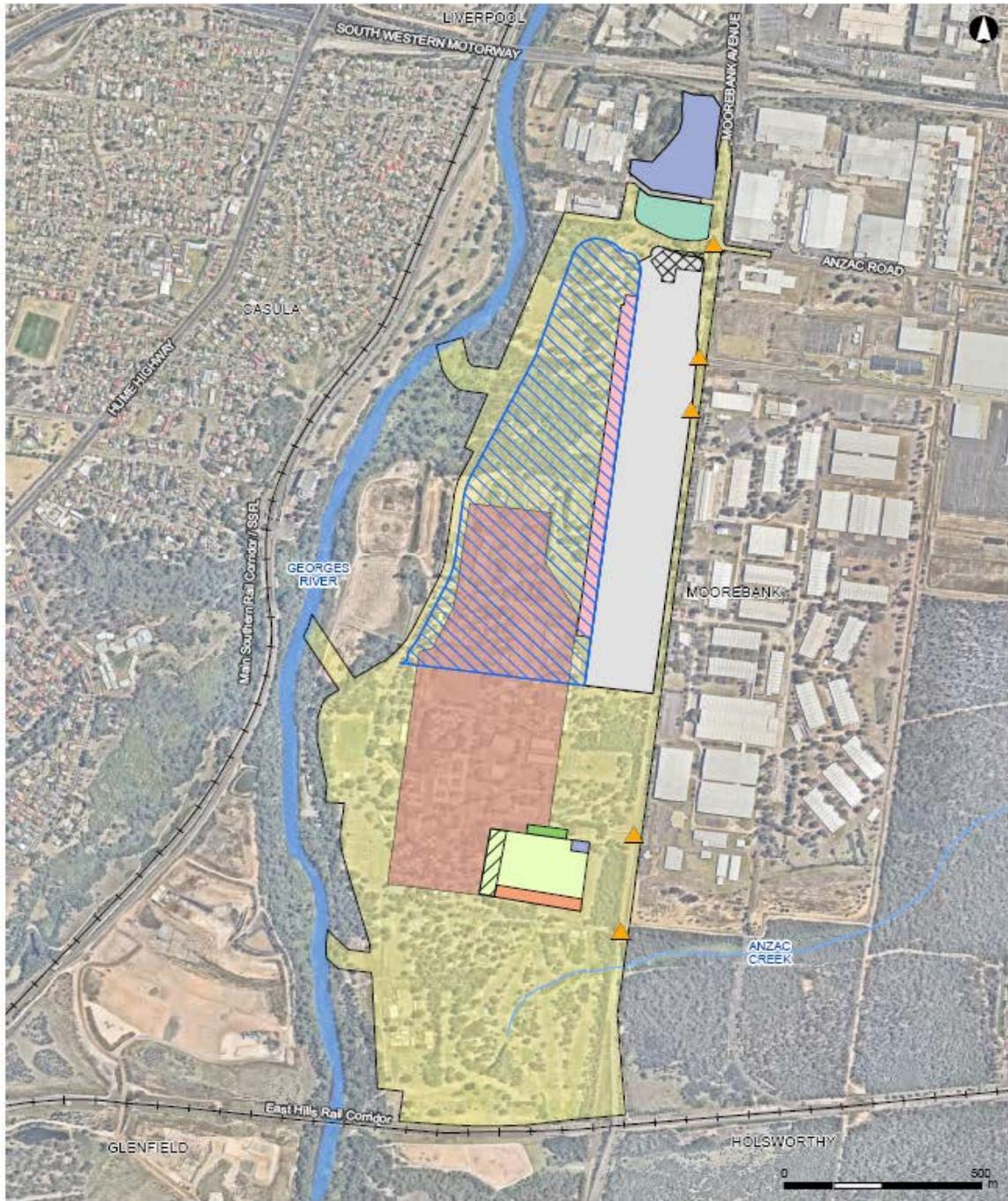
- Truck processing, holding and loading areas – with entrance and exit from Moorebank Avenue via an upgraded intersection and a round-about to distribute traffic between the warehousing precinct and the IMT;
- Rail loading and container storage areas – installation of nine rail sidings, with an adjacent container storage area serviced by manual handling equipment;
- Administration facility with associated car parking and- light vehicle access from Moorebank Avenue;
- The Rail link connection – linking the rail sidings within the IMT to the Rail link, constructed as part of the MPE Project;

Also included within the MPW Stage 2 Proposal are the following key components:

- Warehousing area – construction and operation of approximately 215,000 m³ GFA of warehousing, with warehouses ranging in size from 4,000 m² to 71,000 m². Included within the warehousing area would be ancillary offices, truck and light vehicle parking and associated warehouse access roads;
- Upgraded intersection on Moorebank Avenue, which would provide site access and egress and construction of an internal road;
- Ancillary works – including vegetation clearing, earth works, drainage and on-site detention, utilities installation/connection, signage and landscaping.

Refer to Figure 2.

Figure 2 – Plan of Construction Overview.



LEGEND

MPW PROPOSAL FEATURES

- Construction area
- IMT facility area
- Construction site access
- Batch plant (option 1)
- Construction parking area
- IMT facility compound
- Rail compound

- Warehousing area
- Materials crushing and batch plant (Option 2)
- Earthworks Compound
- Offices
- Pre-construction & bulk earthworks stockpiling
- Truck marshalling area

OTHER PRECINCT FEATURES

- Watercourse
- Existing railway

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Scale: 1:15,000 @ A4



Temporary construction compounds, a batching plant and communal parking areas would be required to support construction works for the Proposal. The locations of these compounds and facilities are indicative and subject to confirmation by the construction contractor and are shown in Figure 2.

The construction compounds identified for the Proposal include:

- Earthworks Compound;
- IMT Facility Compound;
- Rail Compound.

Access to the compound sites will be via existing access points to the MPW site from Moorebank Avenue. An area would be made available in the northern portion of the MPW Stage 2 site to provide worker parking, once the Moorebank Avenue / Anzac Avenue intersection upgrade is complete.

In addition, to the above compounds, individual smaller compounds would be established for the construction of each warehouse.

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 (EP&A Act)

Planning and development within NSW is regulated by the EP&A Act. In relation to bushfire planning for new developments (including Industrial Development) in bushfire prone areas in NSW, the following section of the EP&A 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 EP&A 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 TSC 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 defendable 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 defendable space to buildings is also provided in the document.

1.7 Documentation Reviewed.

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

- Environmental Assessment prepared by Arcadis
- MPW Intermodal Terminal Project Stage 2 Preliminary Environmental Assessment and Request for Secretary's Environmental Assessment Requirements prepared by Arcadis;
- MPW Intermodal Terminal Project Environmental Assessment (Commonwealth EIS);
- Secretaries Environmental Assessment Requirements – SSD14- 6766;
- Plan of Proposal Overview (Stage 2) prepared by Arcadis Australia Pacific Pty Ltd dated 15.4.2016;
- Plan of Construction Overview (Stage 2) prepared by Arcadis Australia Pacific Pty Ltd dated 9.5.2016;
- 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 Proposal site on the 18th December 2015 to assess the topography, slopes, vegetation classification and land use within the Proposal site and on adjoining properties. 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 Proposal site.

SECTION 2

DESCRIPTION OF DEVELOPMENT SITE

2.1 Site Description.

The Proposal site is located approximately 27 kilometres south-west of the Sydney Central Business District (CBD) and approximately 26 kilometres west of Port Botany. The Proposal 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 M5 Motorway provides the main road link between the Proposal 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 Proposal site. The SSFL is a 36 kilometre dedicated freight line between Macarthur and Chullora.

The Proposal site is generally bounded by the Georges River to the west, Moorebank Avenue to the east, the East Hills Railway Line to the south and the M5 Motorway to the north.

The Proposal site is located on Moorebank Avenue, Moorebank and forms Lot 1 in Deposited Plan (DP) 1197707¹, which is wholly owned by the Commonwealth, and leased by SIMTA.

The Proposal would also require works to upgrade the intersection of the MPW site with Moorebank Avenue and would therefore be undertaken on the following parcels of land:

- Moorebank Avenue, owned by the Commonwealth Government, south of Anzac Road Lot 2, DP 1197707 (formerly part of Lot 3001, DP 1125930);

¹ Previously legally described as "Lot 3001, DP 1125930" in the MIC Concept Plan Approval (SSD 5066), however has since been subdivided.

- Moorebank Avenue, owned by Roads and Maritime Services, north of Anzac Road;
- A portion of Bapaume Road, a public road that is the responsibility of Liverpool City Council, to the north;
- A portion of Anzac Road, a public road that is the responsibility of Liverpool City Council, to the east of Moorebank Avenue;
- A portion of Anzac Road (Lot 3 of DP 1197707), which is on adjoining Defence land;

The key existing features of the site are:

- Relatively flat topography, with the western edge flowing down towards the Georges River, which forms the western boundary to the MPW site;
- Direct frontage to Moorebank Avenue, which is a publicly used private road, south of Anzac Road and a publicly owned and used road north of Anzac Road;

The site has been developed and comprises low-rise buildings, including warehouses, administrative offices, residential buildings, access roads, open areas, landscaped fields and the Royal Australian Engineers (RAE) Golf Course and Club. All buildings on the MPW site are currently unoccupied and will be removed during the Early Works;

- Vegetation exists along the western edge of the site, with riparian vegetation along the banks of the Georges River. The riparian vegetation corridor (generally 25 metres wide) provides a wildlife corridor and a buffer for the protection of soil stability, water quality and aquatic habitats. This area has been defined as a conservation area as part of the MPW Concept Plan Approval;
- Native vegetation is scattered across the site;
- Much of the Proposal site has been developed for Defence purposes. However, heritage and biodiversity values still remain on the site;
- A strip of land (up to approximately 250 metres wide) along the western edge of the Proposal site lies below the 1% annual exceedance probability (AEP) flood level.

This area generally corresponds to the proposed MPW conservation area (refer to Figure 1). The area to be retained for conservations is outside of the Proposal site;

- The site is privately owned by the MIC and leased by SIMTA. The site has previously been occupied by the Department of Defence, comprising the School of Military Engineering (SME) and other minor Defence units. These have been relocated as part of the Moorebank Units Relocation project, with the SME relocated to Holsworthy Barracks.

A number of residential suburbs are located in proximity to the Proposal site, including:

- Wattle Grove, located approximately 670 metres from the Proposal site and 1,000 metres from the Rail link connection to the east. The Rail link, which will be used during operation of the Proposal is 750 metres to the west of Wattle Grove at its closest point;
- Moorebank, located approximately 650 metres from the Proposal site and more than 3,300 metres from the Rail link connection to the north. The Rail link is 2,700 metres to the south of Moorebank at its closest point;
- Casula, located approximately 300 metres from the Proposal site and 1,450 metres from the Rail link connection to the west. The Rail link is approximately 250 metres to the east of Casula at the closest point;
- Glenfield, located over 900 metres from the Proposal site and 1,140 metres from the Rail link connection to the south-west. The Rail link is approximately 750 metres to the east of Glenfield at its closest point.

2.2 Land Use Adjoining the MPW Stage 2 Site.

The Proposal site occupies the land to the west of Moorebank Avenue. The western boundary of the Proposal site extends along the eastern bank of the Georges River.

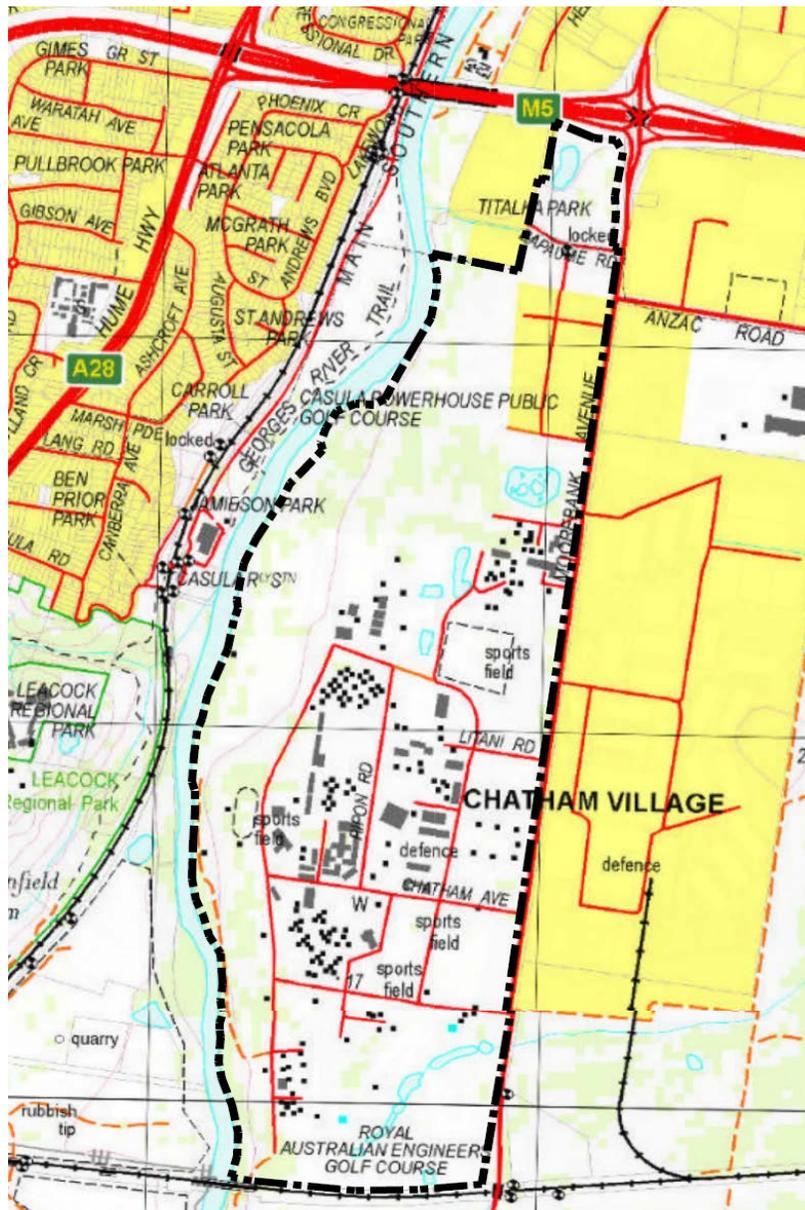
The land to the east of Moorebank Avenue contains the MPE site and the rail corridor. The land to the north of the Proposal site contains industrial development and the M5 Motorway whilst to the south the Proposal site extends to the East Hills Railway Line.

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 Proposal site is level.

Except for a gradual fall towards the Georges River to the west, the surrounding land is also level.

Figure 3 – Topographic Map of the Proposal 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 buildings.

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 Proposal site contains managed vegetation within the curtilage to the existing buildings/facilities; managed fairways within the Royal Australian Engineers Golf Course which occupies the southern portion of the site; a narrow row of screen trees along the eastern [Moorebank Avenue] boundary and various sized scattered pockets of remnant forest and woodland vegetation.

Figure 1 identifies the establishment of a Conservation Area, of varying width, within the western portion of the MPW site, adjacent to the Georges River. This zone will be re-habilitated and retain Riparian Forest vegetation which is or will become bushfire prone.

The remaining vegetation within the operational and construction areas, as defined on Figure 1, will be removed or modified as part of the Proposal or retained and managed to remove the risk of bushfire within the MPW site.

2.4.1 Vegetation Communities on the land adjoining the MPW Site.

The vegetation within the MPE site to the east of Moorebank Avenue will consist of landscaped gardens.

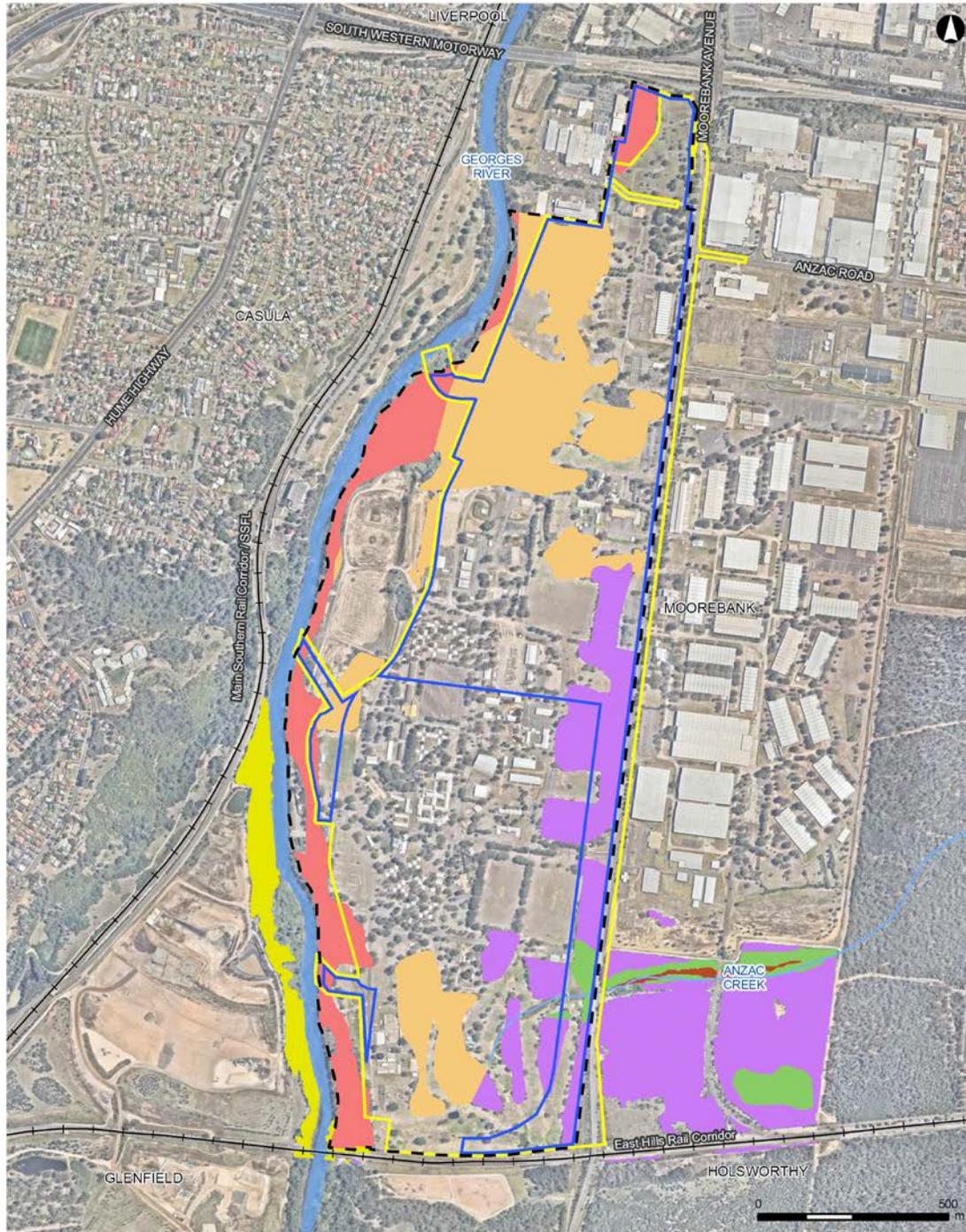
The Commonwealth land to the south of the MPE site contains a wide area of managed land which is slashed.

Beyond the existing MPE 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 to the Proposal site this vegetation is classified as forest due to the density of the shrubs and interlocking canopies.

Refer to Figure 4 showing the vegetation on the Proposal site and on the adjoining land.

Figure 4 – Aerial Photograph showing the vegetation within the Proposal site and on the adjoining land.



- LEGEND**
- MPW site boundary
 - Operational footprint
 - Construction footprint
 - Watercourse
 - Existing railway
 - Biodiversity (ground-truthed) Riparian Forest
 - Coastal Freshwater Reedland
 - River Flat Eucalypt Forest
 - Alluvial Woodland
 - Castlereagh Swamp Woodland
 - Castlereagh Scribbly Gum Woodland

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Figure 4 – Aerial Photograph showing the vegetation within the MPW site and on the adjoining land.

2.5 Significant Environmental Features on the land within the MPW Site.

The Proposal site does not contain 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 or National Parks Estate.

The western portion of the MPW site contains the riparian corridor to the Georges River. This corridor is to be set-aside and rehabilitated within a proposed Conservation Zone.

2.6 Known Threatened Species, Populations, Endangered Ecological Communities or Critical Habitat on the land within the Proposal Site.

The Proposal site contains three threatened ecological communities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or the NSW *Threatened Species Act 1995* (TSC Act):

- Castlereagh Scribbly Gum Woodland in the Sydney Basin bioregion (listed as Endangered under the EPBC Act and Vulnerable under the TSC Act);
- Castlereagh Swamp Woodland and River-flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin; and
- South-east Corner bioregions (both listed as Endangered under the TSC Act).

Two threatened flora species were recorded:

- *Persoonia nutans* (listed as Endangered under the EPBC Act and TSC Act); and
- *Grevillea parviflora* subsp. *parviflora* (listed as Vulnerable under the EPBC Act and TSC Act).

Populations of these species were recorded in patches of Castlereagh Scribbly Gum Woodland adjacent to Moorebank Avenue in the east of the site. One threatened fauna species, Grey-headed Flying-fox (*Pteropus poliocephalus*) (listed as Vulnerable under the EPBC Act and TSC Act) was recorded flying over the site. No critical habitat as defined under the EPBC Act or TSC Act was identified on the site.

2.7 Details of Aboriginal / European Heritage within the Proposal Site.

Sixteen areas and sites of Aboriginal significance have been identified as being relevant to the Proposal. Refer to Aboriginal Heritage Impact Assessment prepared for the Proposal.

There is one Non-Indigenous heritage item on the Proposal site: Moorebank Cultural Landscape. This landscape has been assessed to be of local and Commonwealth significance in terms of historical associations, research potential, technological characteristics, uniqueness and Aboriginal cultural values.

Refer to the Non-Indigenous Heritage Impact Assessment 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 – Proposal Site

Aspect	Existing Land Use	Vegetation within 140 m of the MPW site	Predominant formation class	Effective Slope of land to distance of 100m.	Comments
North & east	Existing development – vacant Commonwealth land	Managed land on MPE site; Dry Sclerophyll Low Open Forest	Nil	Not Applicable – not bushfire prone vegetation	The northern aspect to the site does not contain bushfire prone vegetation within 140m of the site. The MPE site to the east does not contain bushfire prone vegetation however the Commonwealth Land to the east contains Category 1 Bushfire Prone Vegetation
South	East Hills Railway Line & vacant Commonwealth land unmanaged	Slashed grassland & Dry Sclerophyll Low Open Forest	Forest	< 5 degrees downslope to the west into the Georges River	The southern aspect to the site contains bushfire prone vegetation.
West	The Georges River riparian corridor	Rehabilitated riparian corridor	Forest	< 5 degrees downslope to the west into the Georges River	The western aspect to the site contains or will contain bushfire prone vegetation in the riparian corridor.

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 - 2015*”.

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 potential bushfire threat to the Proposal site will come from the rehabilitated forest vegetation within the Conservation Zone which is proposed to be established along the western part of the MPW site, adjacent to the Georges River.

A potential threat also exists from the forest vegetation on the Commonwealth Land to the east of Moorebank Avenue and to the south of the East Hills Railway Line.

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

The < 5 degrees effective slope on the land within the proposed Conservation Zone to the west has a slope index score of 2.0. Therefore the Bushfire Hazard Score for the rehabilitated forest vegetation in the Conservation Zone is $2.8 \times 2.0 = 5.6$, which equates to a numerical Bushfire Hazard Rating of high.

A Bushfire Hazard Rating of high also applies to the vegetation on the Commonwealth Land to the east and south of the MPW site. This hazard is mitigated by the separation provided by the Moorebank Avenue corridor to the east and the East Hill Rail corridor to the south.

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 MPW site, including the Proposal site, from the vegetation in the proposed Conservation Zone is deemed to be high due to the potential for this vegetation to be involved in a fire event which occurs under a northwest, west or southwest wind influence. The threat will be expressed in high levels of ember attack, radiant heat and possible flame contact – the latter depending on the separation width to buildings.

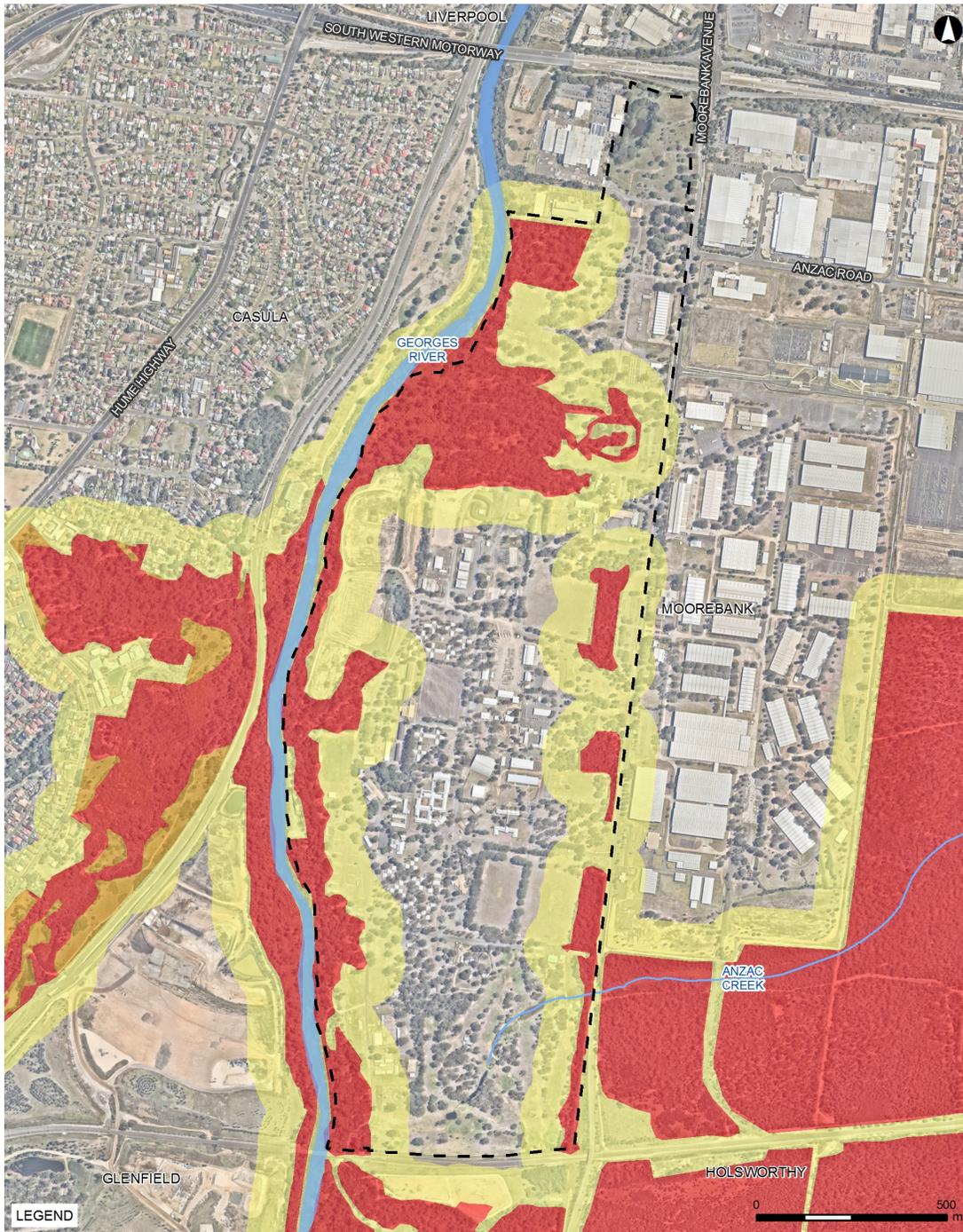
The separation provided by Moorebank Avenue and the East Hills Railway Line to the south reduces the threat from these directions to moderate. The threat from the east and south will be expressed in moderate levels of ember attack and radiant heat. It is not likely that flame contact will occur.

3.5 Bushfire Prone Land Map.

Pursuant to Section 146 of the *EP&A 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 5 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 Proposal site and the effect, on the site, of the 100 metre wide buffer zone to the bushfire prone vegetation.

Figure 5 – Extract of the Certified Liverpool Bushfire Prone Land Map showing the location of the Proposal Site.



LEGEND

- | | |
|-------------------------|-----------------------------|
| MPW site boundary | Bushfire Prone Areas |
| Watercourse | Vegetation Category 1 |
| Existing railway | Vegetation Category 2 |
| Proposed rail alignment | Vegetation Buffer |

Bushfire Prone Areas

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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 Proposal:

The performance criteria for the Proposal are:

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

The Proposal consists of an IMT facility located adjacent to Moorebank Avenue and a warehousing area that extends to the west of the IMT facility.

The IMT facility will not be exposed to direct impacts of a bushfire as the separation to bushfire prone vegetation exceeds 100 metres.

The warehousing area adjoins the rehabilitated Georges River corridor and therefore is subject to the impact from future bushfires spreading under northwest, west and southwest winds, across the forest vegetation.

During the construction phase it is proposed to establish a ‘Construction Parking Area’ and ‘IMT Facility Compound’ in the northern portion of the Proposal site, north of the IMT facility. Both of these sites will not be exposed to impacts of bushfire.

The proposal also establishes an ‘Earthworks Compound’ and ‘Pre-construction & bulk earthworks stockpiling’ and ‘Rail Compound’ to the south of the IMT building. These sites will not be exposed to impacts of bushfire.

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

The defensible space to the west of the IMT facility exceeds 100 metre and will also be protected by the warehousing erected on the land to the west.

The warehousing area extends to the west from the IMT facility and is exposed to a threat from a bushfire event in the proposed Conservation Zone. The Proposal Overview plan [Figure 1] identifies that the warehousing area is located approximately 25 metres from the eastern edge of the proposed Conservation Zone.

This separation reduces the likelihood of direct flame contact on the adjacent buildings.

This setback affords the occupants of the warehouse buildings adequate protection from a bushfire event which may occur in the vegetation to the west [within the Conservation Zone].

(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 (IMT facility and warehouse buildings), from the bushfire hazard to the west, south and east, remove the chance of direct flame contact on the building/s.

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

❖ Public Roads:

The Proposal site is accessed from Moorebank Avenue which is a local road that provides safe operational access/egress for emergency service personnel and occupants of the facility.

❖ Fire Trail Access.

No fire trail access is provided or required – refer to *Emergency Response Access/Egress* below. The design layout for the Proposal provides a fire service access within the Defendable Space located between the warehousing area and the proposed Conversation Zone.

❖ Emergency Response Access / Egress.

The design layout provides for a fire service access to the western perimeter of the Proposal. Internal fire service access is provided utilising the truck loading access roads.

Multiple access points are provided from the Proposal site, onto Moorebank Avenue.

The emergency access/egress within the Proposal 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 Proposal site consists of the provision of an approximately 18 metre wide Landscape Zone along the Moorebank Avenue frontage.

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

The Defendable Space located between the warehousing area and the Conservation Zone shall be maintained as an Inner Protection Area [IPA] and managed to the standards as required by *Planning for Bushfire Protection 2006* and the NSW Rural Fire Service's document '*Standards for Asset Protection Zones*'.

The remainder of the Proposal site shall be maintained to a standard that reduces dry fuel loads to 5 – 8 tonnes per hectare [Outer Protection Area [OPA].

(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 will 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 Proposal site, due to the threat of a bushfire occurrence in the unmanaged vegetation to the west, south and east will not be required as the width of the defendable spaces and management of the land 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 connection is proposed to be located adjacent to the Moorebank Avenue boundary of the site, turning to the southwest to connect with the rail link from the MPE site.

The new Rail link connection will be constructed within a corridor that retains the existing vegetated screening that runs parallel to the Moorebank Avenue boundary to the Proposal site.

The bushfire threat to the fixed assets within the Rail link connection is considered to be low however there is a risk that ignition of adjoining vegetation may occur from sparks given off by rail cars. The full width of the retained vegetation screening 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 (SEARs) requires that an assessment be undertaken against '*Planning for Bushfire Protection 2006*'.

This report has examined the Proposal against the requirements of *Planning for Bushfire Protection 2006* in relation to the provision of bushfire protection measures to the establishment of an IMT facility and warehousing area 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*.

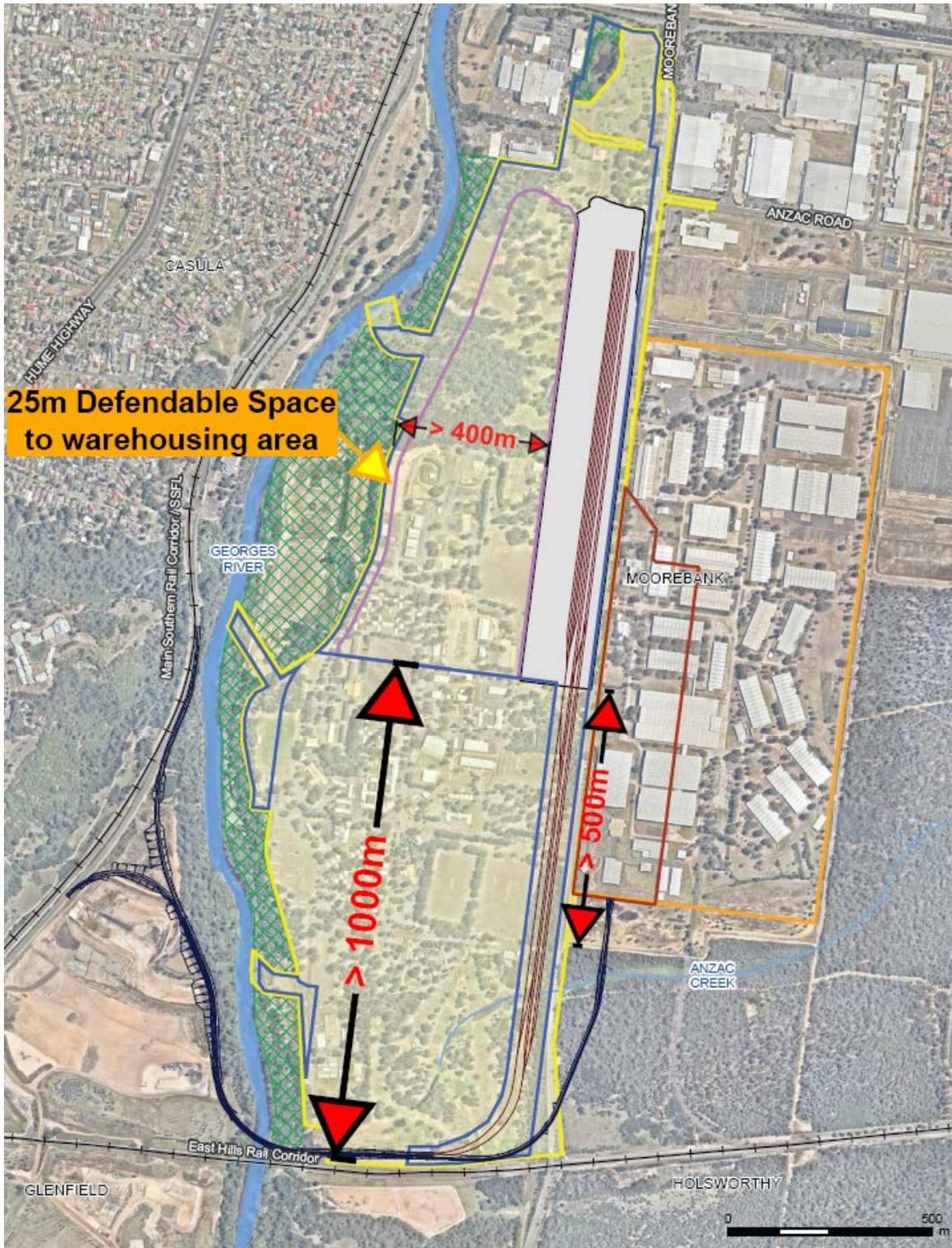
Table 4. Compliance with the specific objectives of *Planning for Bushfire Protection 2006*.

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> and 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 400 metres is provided to the west of the IMT facility and 25 metres to the west of the warehousing 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 Proposal 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 vegetation within the MPW Site will be undertaken by the operators to maintain minimum dry fuels loads within the Defendable Space and the residual land.
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 bushfire and structural fire-fighting requirements.



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

ATTACHMENT A – Plan showing the Defendable Space to the IMT and warehousing 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 2015*;
- *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*.