Prepared for
Port of Newcastle Operations Pty Limited
ABN: 97 539 122 070

Mayfield multi-purpose terminal reconfiguration

Modification Report

25-Mar-2026

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Client: Port of Newcastle Operations Pty Limited

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Prepared by

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Table of Contents

Executive Summary

Port of Newcastle Operations Pty Limited (PON) is seeking approval to modify development consent DA 293-08-00 (Modification 10) for the Multipurpose Terminal (MPT) at Mayfield, New South Wales (NSW). The application is made under section 4.55(1A) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and relates to the southern portion of the MPT that is subject to DA 293-08-00.

The Proposed Modification seeks to remove the prescriptive boundaries associated with the General Cargo Handling Facility (GCHF), allowing general cargo to be stored flexibly across a larger area within the approved MPT. This change would enable PON to optimise existing hardstand areas and respond more effectively to evolving operational demands, particularly the handling and storage of infrastructure components associated with renewable energy projects in NSW. No new land uses, construction works, or changes to approved operational limits are proposed.

The MPT was originally approved in 2001 as part of the remediation and redevelopment of the former BHP Steelworks site. Since that time, the consent has been modified on nine occasions to refine operational arrangements and environmental controls. The temporary relocation of the GCHF to behind Mayfield No. 4 Berth was approved under Modification 7, with time-limited conditions intended to encourage a permanent solution. The Proposed Modification provides that solution by embedding operational flexibility within the existing approval framework.

The Modification Area comprises previously remediated and capped port land that is developed with hardstand and associated port infrastructure. The Proposed Modification does not involve any physical works, ground disturbance or intensification of approved operations. Storage volumes, hours of operation, traffic generation, air quality and noise limits, waste generation, and hazard risk remain unchanged. Operations would continue to be managed in accordance with existing consent conditions and the environmental management plans established under the Mayfield Concept Plan (MCP).

A qualitative assessment of potential environmental impacts has been undertaken and demonstrates that the Proposed Modification would result in negligible environmental impacts. No new or additional impacts are anticipated in relation to traffic, noise, air quality, contamination, biodiversity, heritage, visual amenity or hazards. Given the absence of construction works and the continued use of established management measures, no additional mitigation or management controls are required.

The Proposed Modification has been assessed against relevant strategic, statutory and policy frameworks, including the *Hunter Regional Plan 204*1, the *Greater Newcastle Metropolitan Plan 2036*, the *Newcastle Local Strategic Planning Statement*, the *Port Development Plan 2023–2028* and the MCP. The Proposed Modification aligns with these instruments by supporting efficient use of existing port land, strengthening freight and logistics capability, and facilitating the Port's role in servicing emerging industries and the renewable energy transition.

Consultation was undertaken with relevant government agencies and key stakeholders during preparation of this report. No substantive objections were raised. Community consultation has also been undertaken through PON's established community liaison group, with no concerns identified.

The Proposed Modification has been assessed against the "substantially the same development" test and is considered to remain substantially the same as the development approved under DA 293-08-00 (as modified up to and including Modification 9). The Proposed Modification does not introduce any new or distinct land use, does not alter the fundamental character of the development and does not materially change its environmental impacts.

On this basis, the Proposed Modification is considered appropriate for approval under section 4.55(1A) of the EP&A Act.

Glossary

Term	Definition
AECOM	AECOM Australia Pty Ltd
ARTC	Australian Rail Track Corporation
CBD	Central Business District
CSMP	Contaminated Site Management Plan
DA	Development approval
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
DPHI	Department of Planning, Housing and Infrastructure
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021*
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
FRNSW	Fire and Rescue NSW
GCHF	General cargo handling facility
GHG	Greenhouse gas
LGA	Local government area
LSPS	*Newcastle Local Strategic Planning Statement*
MCP	Mayfield Concept Plan
MNES	Matters of National Environmental Significance
Modification Area	Southern portion of the MPT
MPT	Multi-purpose terminal
NCC	Newcastle City Council
Newcastle LEP	*Newcastle Local Environmental Plan 2012*
NSW	New South Wales
NSWLEC	NSW Land and Environment Court
PDP	*Port Development Plan 2023–2028*
POEO Act	*Protection of the Environment Operations Act 1997*
PON	Port of Newcastle Operations Pty Ltd
Proposed Modification	Removal of the prescriptive boundaries associated with storing various cargo across the multi-purpose terminal (MPT), providing flexibility to store general cargo over a larger area within MPT
Resilience and Hazards SEPP	*State Environmental Planning Policy (Resilience and Hazards) 2021*
Site (the)	‘Closure Area’ of the former BHP Steelworks site
Stolthaven	Stolthaven Australia Pty Ltd
TfNSW	Transport for NSW

Term	Definition
Transport and Infrastructure SEPP	*State Environmental Planning Policy (Transport and Infrastructure) 2021*
VRA	Voluntary Remediation Agreement

1.0 Introduction

Port of Newcastle Operations Pty Ltd (PON) is seeking to modify development approval (DA) 293-08-00 (namely Modification 10) to remove the prescriptive boundaries associated with storing various cargo across the Multi-Purpose Terminal (MPT) at Mayfield, New South Wales (NSW), providing flexibility to store general cargo over a larger area within the MPT (the Proposed Modification).

1.1 The applicant

The Port of Newcastle is managed and developed by Port of Newcastle Investments (Holdings) Trust (trading as PON) under a long-term lease from the NSW Government which commenced on 30 May 2014. PON head office is located at Level 4, 251 Wharf Road, Newcastle, NSW 2300.

PON shareholders are The Infrastructure Fund and China Merchants Port Holdings Company, each holding a 50 per cent share. Both shareholders have strong, global track records in managing large infrastructure assets. PON is committed to the long-term development of the Port and works closely with stakeholders and employees to plan and deliver projects such as the Proposed Modification.

1.2 Background

BHP Limited[1] was granted development consent on 6 April 2001 (DA 293-08-00) for the remediation of the 'Closure Area' of the former BHP Steelworks site (as shown in **Figure 1-1**). The consent included demolition and removal of structures, remediation activities and the construction and operation of an MPT. The development was approved under Part 4 of the NSW *Environment Planning and Assessment Act 1979* (EP&A Act) by the then Minister for Urban Affairs and Planning (now Minister for Planning and Public Spaces).

The MPT is approved over approximately 53.1 hectares (ha) within the northern and eastern portion of the Closure Area comprising distinct areas for the following components:

- Container Terminal - approximately 28.8 ha
- General Cargo Handling Facility (GCHF) - approximately 7.0 ha
- Bulk Handling Terminal - approximately 8.0 ha
- Rail Infrastructure - approximately 9.3 ha.

The development was proposed in two stages:

- Stage 1 - Container Terminal and GCHF
- Stage 2 - Bulk Handling Terminal.

Consent has only been granted for Stage 1.

The MPT supports a wide range of cargo, including containers, general cargo, bulk materials and project cargo. The northern portion of the MPT includes operations covered under DA 8137, which is not subject to this modification.

Under the original consent for DA 293-08-00, the GCHF was positioned in the eastern portion of the MPT, with the balance of the site dedicated to container storage. The consent has since been modified several times, including Modification 7, which temporarily (for a maximum period of ten years) relocated the GCHF to behind the Mayfield No. 4 Berth, comprising an area of approximately 8.0 ha. Modification 7 also amended the original masterplan approved under DA 293-08-00 to remove the prescriptive boundaries for the Container Terminal and Bulk Handling Terminal. Aside from the GCHF, the balance of site within the MPT was amended to be 'direct port industry precinct' (refer to **Figure 1-2**).

[1] Following completion of the remediation works, a handover in ownership to the Newcastle Port Corporation (now PON) occurred

Condition 1.1A of DA 293-08-00 (as modified) enables PON to extend the temporary use of the GCHF at this location, which PON has enacted on several occasions. The current approval for use of the GCHF at Mayfield No. 4 Berth expires on 21 November 2028. In the most recent extension, the NSW Department of Planning, Housing and Infrastructure (DPHI) requested that PON pursue a permanent solution to avoid the need for further extensions.

PON now requires greater flexibility across the southern portion of the MPT site (i.e. the area not subject to DA 8137) to enable the storage of general cargo. This is driven primarily by the need to support the import of infrastructure components associated with renewable energy projects in the region.

Accordingly, rather than seeking to permanently locate the GCHF at Mayfield No. 4 Berth, PON proposes to remove the prescriptive boundaries associated with general cargo storage. This would enable general cargo to be stored across the southern portion of the MPT.

1.3 Approval history

DA-293-08-00 has been modified on nine previous occasions under section 75W of the EP&A Act (now repealed), including:

- Modification 1 (DA-293-008-00-M1) – related to the timing of establishment of a Community Consultive Committee, approved on 29 June 2001
- Modification 2 (DA-293-008-00-M2) – related to the excision of heritage areas from the Closure Area, approved on 13 August 2001
- Modification 3 (DA-293-008-001-M3) – retention of a stand of fig trees and amendments to the noise monitoring requirements, approved on 15 February 2002
- Modification 4 (MOD-77-7-2003-i) – burial of Blast Furnace No. 1 slag stump, approved on 16 September 2003
- Modification 5 (MOD-60-4-2005-i) – updates to land description, soil capping, hours of construction groundwater management, stormwater layout, and layout of site and transport infrastructure, approved on 15 September 2005
- Modification 6 (MOD-64-7-2007-i) – alteration of the alignment of railway lines and relocation of two major stormwater drainage lines, approved on 21 August 2007
- Modification 7 (MOD-56-7-2008) – alterations to, and temporary relocation of, the general cargo handling facility, refurbishment of the existing wharf and an interim change in site access, approved 21 November 2008
- Modification 8 (MOD-06-02-2009) – minor change to the rail line layout, approved 30 March 2009
- Modification 9 (DA-293-008-00-MOD 9) – amendment to noise reporting requirements, approved 29 August 2013.

A portion of the MPT is also subject to DA 8137, which was approved by the Minister for Urban Affairs and Planning on 30 June 2017.

Also, of relevance to the Proposed Modification, is the *Mayfield Concept Plan* (MCP) which was approved in July 2012 by the Minister for Planning. The MCP (09_0096) made provision for the future strategic development of the former BHP steelworks site. This Plan is discussed in more detailed in **Section 2.5**.

1.4 Purpose of this report

This Modification Report has been prepared to accompany an application under sections 4.55(1A) of the EP&A Act to modify DA-293-08-00. The Proposed Modification seeks approval to remove the prescriptive boundaries associated with storing general cargo across the MPT.

This Modification Report provides a description of the Proposed Modification, the statutory context, consultation undertaken, and an assessment of potential environmental impacts in accordance with relevant statutory requirements. This Modification Report has included consideration of the matters set out in section 4.15 of the EP&A Act and has been prepared in accordance with the *State Significant development guidelines – preparing a modification report* (DPIE, 2022).

1.5 Related development

The former BHP berth (adjacent to the Mayfield No. 4 Berth) is proposed to be remediated in late 2026. Remediation activities do not form part of the Proposed Modification as remediation is an approved activity under DA 293-08-00. This fenced area within the Modification Area would not be used for the purposes of the Proposed Modification until remediation activities have been complete.

AECOM

Kilometers
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Legend

- Watercourses
- MPT (DA 293-08-00)
- Modification Area
- Closure Area
- BHP Steelworks Main Site

Note: Display layers are offset slightly for visibility.

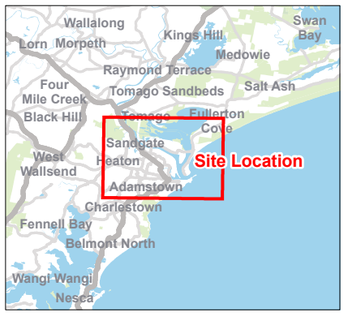
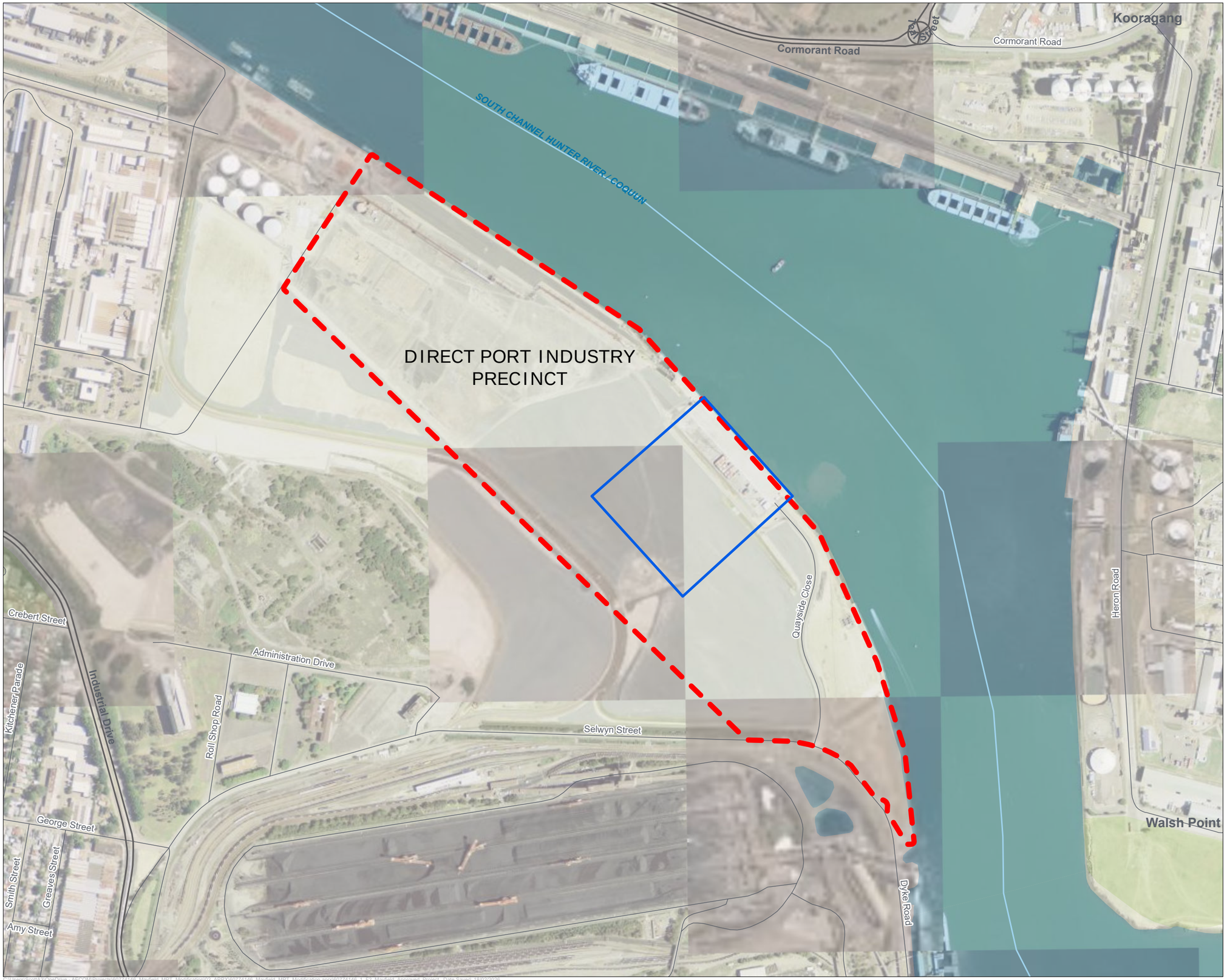


Figure 1-1:
Regional Context

Source: Vantor



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Legend

- Watercourses
- MPT (DA 293-08-00)
- Temporary GCHF

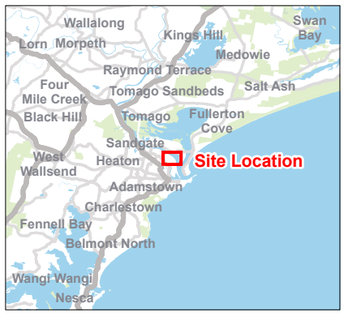

Figure 1-2: Approved MPT

Source: Vantor

2.0 Strategic context

This chapter outlines the strategic context for the Proposed Modification, consistent with the requirements of Section 3.2 of the *State Significant Development Guidelines – Preparing a Modification Report* (DPIE, 2022). It identifies the broader policy, planning and strategic frameworks that apply to the development, and explains how the Proposed Modification aligns with relevant State, regional and local strategies. In doing so, it demonstrates the extent to which the Proposed Modification supports the intended strategic outcomes for the MPT and contributes to the long-term objectives established- under these frameworks.

2.1 Hunter Regional Plan 2041

The *Hunter Regional Plan 2041* established a regional strategy for sustainable growth, economic diversification, and infrastructure led land use planning across the ten local government areas centred on Greater Newcastle. It identifies the Hunter as Australia's leading regional economy and emphasises transition from traditional mining and manufacturing toward cleaner energy industries and diversified trade, supported by an integrated freight and logistics network with direct motorway connections to the Port of Newcastle.

Projected population growth, from 860,000 to nearly 950,000 by 2041, and the need for 101,800 new dwellings will increase demand for reliable supply chains, construction materials, and general cargo throughput linked to Port operations. The Plan promotes an infrastructure first approach, with coordinated sequencing of land use, industrial development, and transport upgrades including the M1 Pacific Motorway, NorthConnex, and related freight corridors to maintain efficient regional access to the Port.

The Plan also supports renewable energy precincts, emerging industries, and transition of legacy sectors, all of which increasingly rely on the Port's ability to handle large infrastructure components such as wind turbine elements and modular plant. Climate resilience is a further priority, with sea level rise, coastal processes, and flooding risks around the Hunter River reinforcing the need for adaptable and risk-aware management of port-side land.

The Proposed Modification directly aligns with these strategic directions by:

- Expanding capacity for general cargo, including renewable energy components
- Improving freight efficiency through greater operational flexibility
- Supporting increased demand driven by population and housing growth
- Optimising existing hardstand in line with infrastructure led planning principles
- Maintaining climate resilience by avoiding intensified land use or new ground disturbance.

Overall, the modification strengthens the Port of Newcastle as a key freight and economic asset within the region.

2.2 Greater Newcastle District Plan

The *Greater Newcastle Metropolitan Plan 2036* provides a metropolitan scale framework guiding the region's transition from a traditional mining and steel base to a service, creative, knowledge and innovation led economy. It highlights major investment in the city centre, growth in tertiary education, research and health precincts, and the rise of nationally significant defence and aerospace industries.

The District Plan positions Greater Newcastle as a globally connected metropolitan area capitalising on its industrial base, diversified economy and strategic coastal location. It emphasises improved metropolitan governance and integration across centres and sectors to enhance the region's competitiveness and reinforce its role as a metropolitan anchor within the Hunter Region. Key outcomes include:

- Building a globally competitive economy
- Strengthening connections to jobs and services

- Supporting the transition to new economy sectors while retaining essential industrial functions
- Coordinating infrastructure delivery.

The District Plan recognises Newcastle as a major coastal city with a globally important port that attracts businesses and skilled workers due to its connectivity and lifestyle advantages. The Port of Newcastle is identified as a critical gateway supporting trade, freight movement and industrial employment, underpinning the region's shift toward a diversified economic future.

The Proposed Modification aligns with these metropolitan directions by:

- Enabling flexible general cargo storage across the MPT
- Strengthening the Port's gateway role
- Supporting emerging industry supply chains
- Enhancing metropolitan scale logistics and employment functions.

By optimising existing approved industrial land and improving freight efficiency without expanding the development footprint, the Proposed Modification advances the District Plan's goals for a globally competitive economy, resilient strategic employment precincts and coordinated metropolitan planning.

2.3 Newcastle Local Strategic Planning Statement

The *Newcastle Local Strategic Planning Statement* (LSPS) outlines a 20-year land use planning vision focused on managing growth, supporting emerging economic sectors, integrating transport, and protecting regionally significant infrastructure and freight corridors. It identifies priorities directly relevant to the Port of Newcastle, including protecting freight movement from incompatible uses, supporting transport–land use integration, and planning for the Port's expansion and diversification.

The LSPS highlights the need to safeguard key freight infrastructure to maintain efficient goods movement and the Port's economic role. It also emphasises transitioning to new economy jobs, supporting creative and emerging industries, and growing sectors such as renewable energy and advanced manufacturing all of which depend on the Port's capacity to receive, store and handle a wide range of general cargo.

Broader priorities, including climate resilience, resource efficiency, sustainable neighbourhood planning and coordinated industrial development, reinforce the importance of making efficient use of zoned industrial land and maintaining operational flexibility in regionally significant employment areas such as the MPT. While not Port-specific, these directives underpin the strategic value of adaptable industrial precincts.

The Proposed Modification advances key LSPS priorities by improving the adaptability of cargo operations within the MPT and ensuring the Port can function more efficiently within its existing footprint. Allowing general cargo to be stored flexibly across the MPT strengthens the Port's role in supporting protected freight corridors, enhances its capacity to service emerging industries, and underpins Newcastle's transition toward a more diverse economic base. This approach maximises the performance of already approved industrial land, avoids unnecessary intensification of impacts, and reinforces LSPS outcomes associated with sustainable employment growth, resilient industrial precincts and safeguarding regionally significant freight infrastructure.

2.4 Port Development Plan 2023-2028

The *Port Development Plan 2023–2028* (PDP) outlines Port of Newcastle's program for reshaping its long-term trade profile by reducing reliance on single commodity exports and strengthening its position as a multisector gateway. It identifies diversification as a central priority, including a target for the Port to transition toward majority non-coal revenue by 2030, reflecting the changing dynamics of global trade and the need for resilient commercial operations. This strategic shift is supported by the Port's substantial physical and operational advantages most notably a deepwater channel operating below full capacity and an extensive area of developable portside land available to support emerging industries.

Within this framework, the PDP highlights several major development pathways that depend on contemporary, flexible cargo management practices.

These include proposals for the Newcastle Deepwater Container Terminal, the Clean Energy Precinct, a dedicated automotive and RORO facility, and upgrades to the Bulk Services Precinct to enable increased throughput of diverse cargo types, project consignments and specialised equipment. These initiatives are intended to broaden the Port's trade base, capture growth in renewable energy and advanced manufacturing supply chains, and ensure infrastructure is configured to support future focused industries.

Alongside its commercial objectives, the PDP reinforces the Port's commitments to sustainability and regulatory stewardship. It emphasises the adoption of ESG aligned frameworks, proactive decarbonisation measures, renewable energy procurement, and careful management of interface pressures such as urban encroachment. These commitments require the Port to maximise the performance of existing land and assets while avoiding unnecessary environmental impacts.

The Proposed Modification supports the intent of the PDP by improving the way the MPT can be used, allowing the Port to adjust storage arrangements in line with fluctuating trade profiles. This increased operational agility makes better use of existing hardstand areas, complements broader precinct level initiatives underway across the Port, and reinforces ongoing efforts to diversify trade activities while upholding environmental and land use commitments. Collectively, these outcomes enhance the Port's ability to service emerging industries and contribute to a more adaptable, sustainable and strategically aligned operational environment consistent with the long-term direction of the PDP.

2.5 Mayfield Concept Plan

The MCP establishes the long-term redevelopment framework for approximately 90 ha of remediated portside land at the former BHP Steelworks site, being one of the largest vacant port landholdings on Australia's eastern seaboard. It provides the strategic basis for expanding Port related activities and supporting economic diversification through improved supply chain capacity.

Approved under section 75O of the EP&A Act (now repealed), the MCP defines five precincts, being the Port of Newcastle Operational, Bulk and General, General Purpose, Container Terminal and Bulk Liquid precincts. Each with intended roles ranging from bulk cargo handling and general freight to container and fuel related operations. These precincts form the structural layout for future development within the MCP.

The MCP sets broad development parameters and environmental performance criteria to guide subsequent project level assessments, ensuring consistent and environmentally responsible delivery of Port related uses. While it does not authorise construction or operation on its own, it safeguards the long-term port function of the MPT, prevents incompatible uses and coordinates supporting road and rail infrastructure. Early development prioritises the Bulk Liquid Precinct, with later stages including a multipurpose cargo facility progressing in line with commercial demand.

The Proposed Modification reinforces the intent of the MCP by enabling the MPT to operate more flexibly within the established precinct framework and environmental performance parameters guiding development across the 90 ha Mayfield site. By allowing general cargo to be stored across the MPT without having to pursue additional modifications with DPHI, precinct boundaries or requiring additional construction, the Proposed Modification remains consistent with the MCP's approach to staged, orderly and environmentally responsible development. This increased operational adaptability supports the MCP's objective of utilising the remediated land for a broad mix of Port related activities, helping to realise its long-term vision for a coordinated, efficient and future-ready port precinct.

As part of the MCP a suite of environmental management plans, strategies and programs were required to be prepared, implemented and updated as individual projects proceed, including:

- Transport Infrastructure Strategy
- Traffic Management Plan
- Air Quality Monitoring Program
- Noise Verification Monitoring Program
- Stormwater Management Strategy
- Port Emergency Response Plan

- Community Communication Strategy.

The relevant management plans, strategies and programs will be amended as necessary to incorporate the Proposed Modification and to ensure environmental management remains consistent across the MPT.

3.0 Description of the proposed modification

3.1 Site description

The MPT is located within the suburb of Mayfield, on the southern arm of the Hunter River, approximately 5 kilometres northwest of the Newcastle Central Business District (CBD). It forms part of the former BHP Steelworks "Closure Area" and is situated within the Port of Newcastle's operational port precinct, adjacent to established wharf, rail and industrial infrastructure.

The approved MPT comprises the following land parcels:

- Lot 41, 42 and 44 DP 1191982
- Lot 51, 52, 53 and 54 DP 1229869.

Collectively, these lots form a contiguous portside industrial area that has been remediated, capped and developed for port related cargo handling purposes in accordance with development consent DA 293-080-0 (as modified).

The MPT is bounded generally by the Hunter River to the north and east, ARTC rail and associated port access roads to the south, and other port related industrial uses to the west. The MPT is characterised by areas of hardstand, internal road and rail infrastructure, wharf and berth facilities, stormwater management systems, security fencing and lighting, and ancillary operational buildings. The surrounding land uses are predominantly industrial and port related, with no sensitive residential receivers in the immediate vicinity.

For the purposes of this Modification Report, the MPT is divided into two functional areas based on existing approvals (as shown in **Figure 3-1**):

- The northern portion of the MPT, includes operations approved under DA 8137 and is not subject to this Modification; and
- The southern portion of the MPT, which is subject to DA 293-08-00 and forms the focus of this Modification Application.

The southern portion of the MPT is hereafter referred to as the Modification Area.

The Modification Area comprises about 30 ha of previously remediated port land that is currently used for container storage, general cargo handling including project cargo laydown, internal freight movements and associated port operations. The area includes behind Mayfield No. 4 Berth, which has been used as the primary operational location for the GCHF since its temporary relocation was approved under Modification No. 7.

The Modification Area is entirely within the Port of Newcastle Lease Area and is zoned SP1 – Special Activities under Chapter 5 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP). It is serviced by established port access roads and rail and is separated from non-industrial via surrounding port operations.

3.2 Approved project

Development consent DA 293-08-00 was granted on 6 April 2001 by the Minister for Urban Affairs and Planning under Part 4 of the EP&A Act for the remediation and redevelopment of the former BHP Steelworks (Closure Area) at Mayfield, Newcastle. The approved development comprised Stage 1, being the remediation of the Closure Area, demolition and removal of existing structures, and the construction and operation of a MPT to facilitate port related cargo handling activities.

The approved MPT occupies approximately 53.1 ha within the northern and eastern portion of the Closure Area and incorporates the following principal infrastructure elements:

- A container terminal, including container stacking areas
- A GCHF
- Internal road and rail infrastructure, including rail sidings connecting to the regional rail network
- Wharf and berth infrastructure along the south arm of the Hunter River
- Hardstand across the entire MPT
- Supporting facilities such as administration buildings, workshops, fuel storage, staff and visitor parking, utilities, security fencing and lighting, and stormwater management systems.

The approved development includes the operation of a 265 mlong berth, a wharf apron of approximately 3,630 m², and a hardstand area of approximately 8,745 m², which may be used for cargo handling, storage and assembly activities associated with port operations. These facilities form the core operational area supporting general cargo and project cargo handling at the MPT.

The development was approved in two stages:

- Stage 1, comprising the container terminal and GCHF, was authorised, constructed and completed in December 2009, with operations commencing in January 2010.
- Stage 2, relating to a bulk handling terminal, was identified in the original approval documentation but has not been constructed and does not form part of the approved operational development under DA 293-08-00.

Since the original consent was granted, DA 293-08-00 has been modified on several occasions to refine the approved works and operational controls, including changes to rail alignments, stormwater and groundwater management, soil capping requirements, access arrangements, and noise monitoring and reporting provisions. These modifications were approved under former sections 96 and 75W of the EP&A Act and are consolidated into the current development consent, as modified, up to and including Modification 9 (approved 29 August 2013).

3.3 Proposed modification

The Proposed Modification involves the removal of prescriptive boundaries associated with the GCHF, providing flexibility to store general cargo across the Modification Area. The Modification Area is already approved for construction of the MPT elements.

Table 3-1 details the proposed changes of approved project elements.

Table 3-1 Modified project table for the MPT

Approved elements (original consent)	Status	Proposed changes	Detail of change
Remediation of the Closure Area	Remediation was completed in 2019	None	No change proposed
Container Terminal	Operation of the Container Terminal has not yet commenced	None	No change proposed
General Cargo Handling Facility	Modification 7 temporarily relocated the GCHF to behind the Mayfield No. 4 Berth. Partial construction of the GCHF was completed in 2009, with operations commencing in January 2010.	Yes	The Proposed Modification removes the prescriptive boundary of the GCHF enabling general cargo to be stored flexibly across the entire Modification Area.

Approved elements (original consent)	Status	Proposed changes	Detail of change
	The GCHF comprises a concrete area, a hardstand cover with bituminous material used for container and general cargo storage, a site office, security guard hut and amenities.		No other changes are proposed to the GCHF.

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metres
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Legend

- Mayfield Cargo Storage Facility (DA 8137)
- MPT (DA 293-08-00)
- Modification Area
- Watercourses

Note: Display layers are offset slightly for visibility.

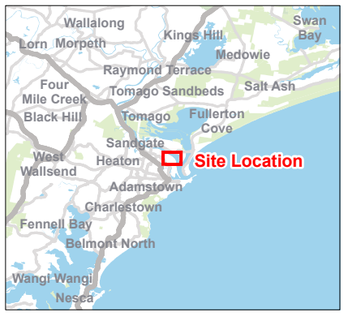

Figure 3-1
Proposed Modification

Source: Vantor

3.4 Proposed amendments to the conditions of consent

As part of the Proposed Modification, PON is seeking amendments to some of the existing conditions of consent. **Table 3-2** identifies existing conditions of consent within DA 293-08-00 and MP09_0096 which are relevant to the Proposed Modification and where changes are proposed.

Only two changes are proposed which are intended to formalise and expand the operational flexibility of the GCHF across the Modification Area.

Table 3-2 Existing conditions of consent relevant to the Proposed Modification

Current condition	Proposed change	Reason
DA 293-08-00		
1.1A The approval for the General Cargo Handling Facility granted under MOD-56-7-2008 shall operate for a maximum period of ten years from the date of this modification, or as otherwise agreed to by the Director-General.	Removal of this condition	The Proposed Modification is seeking to expand and formalise the use of the GCHF across the Modification Area.
1.1B At five yearly intervals following commencement of operation of the General Cargo Handling Facility, the applicant shall submit a report to the Director–General on the need or otherwise for the General Cargo Handling Facility to be retained on site and to remain operational. The report must include supporting justification.	Removal of this condition	The Proposed Modification is seeking to expand and formalise the use of the GCHF across the Modification Area.
5.11 The following noise limits apply to the operation of the Multi-Purpose Terminal at the locations shown are as follows..	No change	The Proposed Modification does not seek to amend noise limits approved under DA 293-08-00.
7.1 The Container Terminal and General Cargo Handling Facility shall neither receive as cargo nor dispatch as cargo any material classified as a "Class 7 dangerous good" (radioactive material) under the Australian Dangerous Goods Code.	No change	The Proposed Modification does not seek to amend any conditions in regard to storage and handling of dangerous goods.
7.2 The Applicant shall not use or store, temporarily or otherwise, any dangerous good of Class 1 (explosives) on the site without the prior written approval of the Director-General. In seeking the Director-General's approval, the Applicant shall provide the following information		
7.3 All dangerous goods received as cargo at either the Container Terminal or the General Cargo Handling Facility shall be dispatched from the site within 72 hours of receiving those goods.		

Current condition	Proposed change	Reason
MP09_0096		
2.2 Projects associated with this Concept Plan shall be operated with the objective of not exceeding the capacity of the transport network, including the local, regional and State road network, and the container freight road volume and traffic movements identified in Table 1, subject to the identified exceptions, which will be considered in future project assessments.	No change	The Proposed Modification does not seek to amend traffic movement limits approved under MP09_0096.
2.3 Projects associated with this Concept Plan, involving the movement of container freight by road, shall not exceed the total limits presented in Table 1, except as identified.		
2.18 The Proponent shall, in relation to any project associated with the Concept Plan in the Container Terminal Precinct, assess and implement feasible and reasonable noise mitigation measures to reduce traffic noise impacts associated with the total Concept Plan (including container road freight movements up to 700,000 TEU) on sensitive receivers where exceedances of traffic noise criteria have been predicted. The application of mitigation measures shall be consistent with the requirements of the NSI4/ Road Noise Policy (DECCW, 2011).		
2.11 Projects associated with this Concept Plan approval shall be designed, constructed and operated with the objective of meeting the overall site pollutant performance criteria described in Table 11-6 (or as may be updated in the source documents), of the document referred to in requirement 1 .1b), including the utilisation of industry accepted air quality management measures for the transport, handling and storage of pollutant sources.	No change	The Proposed Modification does not seek to amend approved material classes stored on site.
2.17 Projects associated with this Concept Plan approval shall be designed and operated with the objective of complying with the amenity noise goals at sensitive residential receivers as detailed in Table 4.	No change	The Proposed Modification does not seek to amend these noise limits.

3.5 Substantially the same development

For development consents issued by a consent authority, such as DA 293-08-00, modification can be sought via section 4.55 of the EP&A Act. PON is seeking to modify DA 293-08-00 under section 4.55(1A) of the EP&A Act. To progress a modification in accordance with section 4.55(1A) of the EP&A Act, the modification must be 'substantially the same development' as originally approved.

However, transitional arrangements are in place for development that was previously a transitional Part 3A project and whose approval was modified under section 75W (now repealed) of the EP&A Act. For these developments, pursuant to Schedule 2, Clause 3BA(6) of the *Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017,* the consent authority must be satisfied that a Proposed Modification is 'substantially the same development' as the development authorised by the consent (as last modified under section 75W (now repealed) of the EP&A Act).

The MPT was taken to be an approved project under the former Part 3A provisions, pursuant to the former clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000* (now repealed), and DA 293-08-00 was modified previously under Section 75W (now repealed) of the EP&A Act. Modification 9 was the last modification to DA 293-08-00 approved under the former Section 75W provisions. Therefore, the consent authority must be satisfied that the Proposed Modification is 'substantially the same development' as the development approved under DA 293-08-00 (as modified, up to and including Modification 9).

Numerous decisions made by the NSW Land and Environment Court (NSWLEC) have been issued to assist in determining whether a modification is considered 'substantially the same development'. The following proceedings are considered relevant to the Proposed Modification:

- ''Substantially'' means ''essentially or materially'' or ''having the same essence'' (NSWLEC, 1999)
- A development can still be substantially the same even if the development as modified involves land that was not the subject of the original consent (provided that the consent authority is satisfied that the proposal is substantially the same) (NSWLEC, 2008)
- If the development as modified involves an additional and distinct land use, it is not substantially the same development (NSWLEC, 1992)
- Notwithstanding the above, development as modified would not necessarily be substantially the same solely because it was for precisely the same use as that for which consent was originally granted (NSWLEC, 1999)
- Recent case law confirms that the test remains qualitative and holistic, focusing on the material essence of the development rather than superficial similarities (NSWLEC, 2024).

Based on the above established NSWLEC principles, the Proposed Modification is considered to be 'substantially the same development' as approved under DA 293-08-00 (as modified up to and including Modification 9). The test for 'substantially the same development' is qualitative and holistic, focusing on whether the development retains its essential or material character (NSWLEC, 1999) and (NSWLEC, 2024).

Prior to Modification 7, the GCHF was approved for the eastern section of the MPT. As part of Modification 7, the GCHF was temporarily relocated to behind Mayfield No. 4 berth. The Proposed Modification seeks to allow storage of general cargo across a larger area within the MPT. This does not introduce any new or distinct land use, which would otherwise fail the test (NSWLEC, 1992), nor does it alter the fundamental purpose of the development.

Further, the Proposed Modification does not increase the scale of the development, processing limits, hours of operation, air quality or noise limits, traffic loads, or waste generation. These factors confirm that the modification does not materially change the environmental impacts or operational parameters of the approved development (NSWLEC, 2008). **Section 6.0** assesses the potential impacts resulting from the Proposed Modification.

Accordingly, the Proposed Modification retains the same essence and character as the development approved under DA 293-08-00 (as modified, up to and including Modification 9) and is therefore considered to be 'substantially the same development' within the meaning of section 4.55 of the EP&A Act.

Additionally, the strategic need for the Proposed Modification is to give the Port greater flexibility to handle diverse cargo types at the MPT and the Port's diversification strategy by removing restrictive storage boundaries. These strategic needs are consistent with the objectives of the original DA 293-08-00, the PDP and the MCP (as discussed in **Section 2.0**).

4.0 Statutory context

4.1 Newcastle Local Environment Plan 2012

The Modification Area is located within the Newcastle local government area (LGA) which is ordinarily governed by the *Newcastle Local Environmental Plan 2012* (Newcastle LEP). However, the Modification Area also lies within the Port of Newcastle Lease Area, as detailed in Chapter 5 of the Transport and Infrastructure SEPP (refer to **Section 4.3.1**). As the relevant provisions of the Transport and Infrastructure SEPP apply to land within the port area, the Newcastle LEP does not apply to the Proposed Modification, and no further consideration of the Newcastle LEP is required. Subsequently, no further consideration of the Newcastle Development Control Plan 2012 is required.

4.2 Environmental Planning and Assessment Act 1979

The EP&A Act and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) provide the framework for environmental planning in NSW. The EP&A Act aims to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.

4.2.1 Matters for consideration

In determining a development application, the consent authority must take into consideration the matters listed under section 4.15(1) of the EP&A Act as relevant to the development. **Table 4-1** identifies each matter for consideration along with reference to where the matter is addressed in this Modification Report.

Table 4-1 Matters for consideration under section 4.15(1) of the EP&A Act

Section 4.15(1)		Comment / where addressed
a.	the provisions of any of the following documents that apply to the land to which the development application relates:	
i.	any environmental planning instrument	**Section 4.1** and **Section 4.3**
ii.	any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved)	N/A - no draft environmental planning instruments are relevant to the Proposed Modification
iii.	any development control plan	Development control plans do not apply to SSD (refer to **Section 4.1**)
iv.	any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter under section 7.4	No known planning agreements are applicable to the Proposed Modification
v.	the regulations (to the extent that they prescribe matters for the purpose of this paragraph)	**Section 4.2.2**
b.	the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	**Section 6.0**
c.	the suitability of the site for the development	**Section 3.1** and **Section 6.0**
d.	any submissions made in accordance with this Act or the regulations	**Section 5.0** and **Section 7.0**

Section 4.15(1)	Comment / where addressed
e. the public interest.	**Section 6.0** and **Section 7.0**

4.2.2 Environmental Planning and Assessment Regulation 2021

Clause 100(1) of the EP&A Regulation sets out the information required to be included in an application for modification of development consent. **Table 4-2** includes these requirements, along with reference to where the matter is addressed in this Modification Report.

Table 4-2 Requirements for modification applications under clause 100(1) of the EP&A Regulation

Clause 100(1)	Comment / where addressed
a. the name and address of the applicant	**Section 1.1**
b. a description of the development that will be carried out under the development consent	**Section 3.0**
c. the address and folio identifier of the land on which the development will be carried out	**Section 3.1**
d. a description of the modification to the development consent, including the name, number and date of plans that have changed, to enable the consent authority to compare the development with the development originally approved	**Section 3.4** – no plans included in development consent
e. whether the modification is intended to: i. merely correct a minor error, misdescription or miscalculation, or ii. have another effect specified in the modification application	**Section 3.3**
f. a description of the expected impacts of the modification	**Section 6.0**
g. an undertaking that the modified development will remain substantially the same as the development originally approved	**Section 3.5**
h. for a modification application that is accompanied by a biodiversity development assessment report – the biodiversity credits information	N/A – a biodiversity development assessment report is not required (refer to **Section 6.1**)
i. if the applicant is not the owner of the land – a statement that the owner consents to the making of the modification application	Landowner consent has been provided to DPHI
j. whether the modification application is being made to – i. the Court under the Act, section 4.55, or ii. (ii) the consent authority under the Act, section 4.56	Not applicable.

4.3 Other NSW legislation

4.3.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

Chapter 5 of the Transport and Infrastructure SEPP provides a consistent planning regime for development and delivery of infrastructure on land in Port Botany, Port Kembla and Port of Newcastle.

The Proposed Modification is located within the Port of Newcastle lease area and zoned SP1 Special Activities under the Transport and Infrastructure SEPP. The Proposed Modification is defined as 'port facilities' under section 5.2, for which development is permissible with consent in the SP1 Special Activities zone.

4.3.2 State Environmental Planning Policy (Resilience and Hazards) 2021

Chapter 4 of the *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP) provides a state-wide planning approach for the remediation of contaminated land. Section 4.6 of the Resilience and Hazards SEPP requires a consent authority to consider whether the land is contaminated and whether it is suitable (or can be made suitable) for a proposed development.

In March 2008, a Contaminated Site Management Plan (CSMP) was prepared, which formed part of the Voluntary Remediation Agreement (VRA) formed under the *Contaminated Land Management Act 1994* for DA 293-08-00. The CSMP provided a common framework for the design, implementation, completion, use and maintenance of remediation and project works.

Remediation works were completed in two stages between 2008 and 2011. Upon completion, the MPT was capped and some areas constructed with hardstand.

The Proposed Modification does not involve any intrusive ground works or activities that would impact the capping.

4.3.3 Protection of the Environment Operations Act 1997

The NSW *Protection of the Environment Operations Act 1997* (POEO Act) aims to protect, enhance and restore the quality of the environment in NSW, to reduce risk to human health and promote mechanisms that minimise environmental degradation through a strong set of provisions and offences.

An Environment Protection Licence (EPL) is required where any activities associated with a development are determined to be a 'scheduled activity' under Schedule 1 of the POEO Act. Mayfield No. 4 berth, which is located within the MPT, currently operates under EPL 13181.

The Proposed Modification does not involve any changes the EPL.

4.3.4 Biodiversity Conservation Act 2016

The purpose of the NSW *Biodiversity Conservation Act 2016* (BC Act) is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. Section 7.17 of the BC Act specifically relates to modifications of planning approvals and requirements for further biodiversity assessment reports.

The original EIS identified very little vegetation present within the Closure Area and as such, the area does not provide suitable habitat which would satisfy the life cycle needs of any native fauna species (URS, 2000). Additionally, hardstanding of this area is already assessed and approved under DA 293-08-00 and this modification relates to the use of the land for storage.

Section 7.17(2)(c) is relevant to the Proposed Modification, given that the Modification Area will not increase impact on biodiversity values and a biodiversity development assessment report is not required.

4.4 Commonwealth Legislation

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires the approval of the Commonwealth Minister for the Environment for actions that may have a significant impact on Matters of National Environmental Significance (MNES), Commonwealth activities or actions on Commonwealth land likely to have a significant impact on the environment. The EPBC Act lists nine MNES that must be considered.

An EPBC Act Protected Matters Search of MNES was undertaken on 28 January 2026 to check what MNES may be present within a 10 km radius of the Modification Area. The results of the search are contained in **Appendix A** and summarised in **Table 4-3**.

The Proposed Modification is not expected to have a significant impact on relevant MNES. Accordingly, referral to the Commonwealth Minister for the Environment under the EPBC Act is not required.

Table 4-3 Consideration MNES under the EPBC Act

MNES	Comment
Australia's World Heritage properties	There are no World Heritage properties within 10 km of the Modification Area.
National Heritage Places	There are no World Heritage properties within 10 km of the Modification Area.
Ramsar wetlands of international importance	The Modification Area is approximately 1.72 km south of a wetland of international importance, being Hunter Estuary Wetlands. Given the minor extent of works proposed, impacts this wetland would be unlikely to occur.
Nationally threatened species and ecological communities	Eight threatened ecological communities and 107 threatened species were identified within 10 km of the Modification Area. Given the minor extent of works proposed, impacts to Commonwealth-listed threatened species or ecological communities would be unlikely to occur. Additionally, the site does not contain suitable habitat for breeding or foraging.
Migratory species listed under the EPBC Act	Seventy-seven migratory species were identified within 10 km of the Modification Area. Given the minor extent of works proposed, impacts to Commonwealth-listed migratory species would be unlikely to occur. Additionally, the site does not contain suitable habitat for breeding or foraging.
Commonwealth marine areas	One commonwealth marine area was identified within 10 km of the Modification Area. Given the minor extent of works proposed, impacts to commonwealth marine area would be unlikely to occur.
Great Barrier Reef Marine Park	The Proposed Modification is not located within or adjacent to the Great Barrier Reef Marine Park. There would be no direct or indirect impact upon the Great Barrier Reef Marine Park.
Nuclear actions, including uranium mining	The Proposed Modification would not involve a nuclear action.
Water resources impacted on by a coal seam gas or large coal mining development	The Proposed Modification would not involve coal seam gas or coal mining.

5.0 Engagement

5.1 Agency and stakeholders

PON discussed with DPHI via email on 10 November 2025 to provide details of the Proposed Modification and seek feedback regarding matters to be addressed in this Modification Report. No issues were raised during this briefing. DPHI suggested an amended boundary for the Proposed Modification, to avoid overlap with operations currently approved under DA 8137.

During the preparation of this Modification Report, a letter was issued to the following agencies and stakeholders on 27 January 2026:

- NSW Department of Climate Change, Energy, the Environment and Water (DEECCW)
- Transport for NSW (TfNSW)
- Environment Protection Authority (EPA)
- Fire and Rescue NSW (FRNSW)
- Newcastle City Council (NCC)
- Stolthaven Australia Pty Ltd (Stolthaven).

The letter included a description of the Proposed Modification, the environmental impact assessment process and provided PON's contact details for agencies and stakeholders to seek further information or provide feedback.

InfraBuild, the Rail Infrastructure Manager of the rail siding at Mayfield, were also notified about the Modification on 17 March 2025.

Feedback received is summarised in **Table 5-1**.

Table 5-1 Feedback received from agencies and stakeholders

Agency / stakeholder	Feedback	Comment / where addressed
DEECCW	At the time of lodgement, a response from DEECCW was not received.	Should any comments from DEECCW be received, they will be considered and addressed.
TfNSW	A response was received on 4 February 2026. TfNSW advised that they have no requirements for the Proposed Modification, at this stage, as no impact on the classified road network is anticipated.	This response is noted and no further comment is required at this stage.
EPA	A response was received on 5 February 2026. EPA had no comments on the Proposed Modification.	This response is noted and no further comment is required at this stage.
FRNSW	A response was received on 2 February 2026. FRNSW advised they will provide advice through DPHI as the modification progresses.	This response is noted and no further comment is required at this stage.
NCC	At the time of lodgement, a response from NCC was not received.	Should any comments from NCC be received, they will be considered and addressed.

Agency / stakeholder	Feedback	Comment / where addressed
Stolthaven	A response was received on 2 February 2026. Stolthaven queried the definition of general cargo but otherwise raised no concerns.	The GCHF was defined in the original EIS and subsequent modifications as *product such as, containers, palletised units and products which cannot be transported in containers.* The Proposed Modification does not seek to depart from what is already approved.
InfraBuild	A response was received on 17 March 2026. InfraBuild had no comments on the Proposed Modification.	This response is noted and no further comment is required at this stage.

5.2 Community

PON has quarterly meetings with the community liaison group. At the meetings on 25 November 2025 and 24 February 2026, PON briefed the group on the Proposed Modification and provided an opportunity for discussion. No concerns or issues were raised, rather the proposal was positively received. PON will continue to update the community liaison group on the Proposed Modification throughout the year.

6.0 Assessment of impacts

6.1 Environmental issues

The Proposed Modification does not introduce environmental impacts above those previously assessed as part of DA 293-08-00 (as modified). Importantly, the Proposed Modification would not involve any ground disturbance, physical works or construction of new structures, as the Modification Area is already approved the construction and operation of MPT elements. However, some parts of the MPT are not hardstand. PON are progressing construction of hardstand concurrently to the Proposed Modification, as these works are permitted under DA 293-08-00.

As no construction activities are proposed, there is no potential for construction-related environmental impacts. Accordingly, construction impacts have not been considered further as part of this assessment.

A qualitative assessment has been undertaken for the potential operational impacts of the Proposed Modification, as outlined in **Table 6-1**. Operations would continue to be undertaken in accordance with the existing development consent conditions and applicable management plans established for the MCP. As such, potential operational impacts are expected to be minimal, with activities remaining consistent with existing MPT operations and only minor changes proposed to internal storage locations.

Table 6-1 Environmental assessment of potential operational impacts

Environmental factor	Consideration	Impact	Proposed mitigation
Social and economic	The Proposed Modification would enable PON to continue supporting its established role in NSW's renewable energy transition as a key gateway for the delivery and storage of critical renewable energy infrastructure. Renewable energy project components require expansive areas of land and PON require the flexibility within the Modification Area to store this cargo, in addition to having sufficient space to store other general cargo.	The Proposed Modification would not alter the overall social or economic aspects of port operations. It would enable positive impacts on social and economic values as it facilitates storage and efficient handling of renewable energy projects within NSW.	The Proposed Modification will be managed under the existing Operational Environmental Management Plan (OEMP).
Traffic	No additional truck movements are proposed as a result of the modification. Traffic Monitoring Data is published bi-monthly on PON's website. The latest report from March 2026 is provided in **Appendix B**. The monitoring data demonstrates that PON is well within its truck movement capacity limits as stipulated by the Mayfield Concept Plan Approval.	The Proposed Modification does not propose additional traffic impacts above those already assessed and previously approved under DA 293-08-00 and the Mayfield Concept Plan. Therefore, negligible traffic impacts are anticipated.	Traffic movements will continue to be managed in accordance with the Mayfield Traffic Management Plan (**Appendix C**) and monitored in accordance with the Traffic Monitoring Plan.
Soil and water	The original EIS permitted approval to hardstand the MPT, and the Proposed Modification does not seek to amend this. Storage of general cargo across the MPT may result in a slightly reduced impact to surface water flows when compared to storage of containers.	Overall, negligible impacts to drainage, surface water flows and soils are expected from the Proposed Modification above those already assessed and previously approved under DA 293-08-00 and the Mayfield Concept Plan.	Stormwater and drainage flows will continue to be managed in accordance with the Concept Stormwater Management Strategy (**Appendix D**).

Environmental factor	Consideration	Impact	Proposed mitigation
Contamination	As detailed in **Section 4.3.2**, remediation works occurred between 2008 and 2011 which capped the MPT. This was approved under DA 293-08-00 along with construction and operation of the MPT (URS, 2000). There is a small portion of land which is subject to remediation in late 2026, however this is not part of the Proposed Modification (refer to **Section 1.5**).	The Proposed Modification does not introduce any new activities that have not been subject to previous approval. Additionally, the Proposed Modification does not involve any intrusive ground works or activities that would impact the capping. Therefore, negligible impacts to contamination are anticipated.	Any activities within the Modification Area will continue to be subject to the Contaminated Land Management Plan.
Biodiversity	The Modification Area is in a highly disturbed environment which has been subject to long-term port operations. The original EIS permitted approval to hardstand the MPT, and the Proposed Modification does not seek to amend this (URS, 2000). Storage of general cargo across the approved MPT is considered unlikely to impact on biodiversity.	The Proposed Modification does not change impacts to biodiversity above what has already been assessed and previously approved under DA 293-08-00, therefore there is negligible impact to biodiversity values.	The Proposed Modification will be managed under the existing OEMP.
Heritage	Similar to the above, given the Modification Area is in a highly disturbed environment, which has been subject to long-term port operations, and has previously been assessed and approved to be hardstand, the Proposed Modification is not expected to result in any heritage impacts as it does not seek to amend this. Storage of general cargo would remain within the approved MPT.	The Proposed Modification does not change impacts to heritage above what has already been assessed and previously approved under DA 293-08-00, therefore there is negligible impact to heritage values.	The Proposed Modification will be managed under the existing OEMP.

Environmental factor	Consideration	Impact	Proposed mitigation
Visual amenity	The Modification Area is surrounded by established port and other industrial operations. The Proposed Modification does not involve ground disturbance, physical works or construction of new structures.	The storage of general cargo across the MPT is considered to be generally in keeping with the original proposal. Therefore, negligible visual impacts are expected.	The Proposed Modification will be managed under the existing OEMP.
Noise	Operations would continue within the established port and industrial setting, where operational noise is already present. The Proposed Modification would allow the storage of general cargo across the MPT which was previously assessed and approved for a container terminal and GCHF (URS, 2000).	The Proposed Modification would not increase existing noise emissions or introduce any new noise sources. Given the distance to the nearest residential receiver, being over 800 meters, the Proposed Modification is not anticipated to result in noise impacts above what has already been assessed and previously approved under DA 293-08-00 and the Mayfield Concept Plan.	Noise from port operations will continue to be managed in accordance with the MCP Noise Verification Monitoring Program.
Air quality and greenhouse gas (GHG) emissions	The Proposed Modification would allow the storage of general cargo across the MPT, which was previously assessed and approved for a container terminal and GCHF (URS, 2000).	The Proposed Modification would not modify the approved material classes stored on site. Therefore, there would be no increase to existing air emissions above what has already been assessed and previously approved under DA 293-08-00 and the Mayfield Concept Plan. Negligible impacts to local air quality and GHG emissions are anticipated.	Air quality will continue to be managed in accordance with the MCP Air Quality Monitoring Program.

Environmental factor	Consideration	Impact	Proposed mitigation
Hazard and risk	The Proposed Modification would allow the storage of general cargo across the MPT which was previously assessed and approved for a container terminal and GCHF (URS, 2000).	The Proposed Modification would not introduce any new hazards or increase existing risks associated with current port operations above what has already been assessed and previously approved under DA 293-08-00. Therefore, no impacts are anticipated as a result of the Proposed Modification.	Hazard and risks will continue to be managed in accordance with the Final Hazard Analysis, Fire Safety Study, and existing inductions and practices such as Safe Work Method Statements.
Waste management	The Proposed Modification would allow the storage of general cargo across the MPT which was previously assessed and approved for a container terminal and GCHF (URS, 2000).	The Proposed Modification would not change any existing waste management arrangements above what has already been assessed and previously approved under DA 293-08-00.	The Proposed Modification will be managed under the existing OEMP.
Cumulative impacts	As described in **Section 2.0**, the Proposed Modification supports PON's long-term strategic objectives-, as set out in the PDP and the MCP.	Given that negligible new environmental impacts have been identified as a result of the Proposed Modification, it is considered unlikely to result in a cumulative impact.	Cumulative impacts of operations under the MCP are assessed against total site criteria, and the Proposed Modification will form part of this.

6.2 Summary of management measures

Operations would continue to be managed under existing environmental controls, including traffic and surface water management procedures, as specified in the MCP Management Plans. These established measures would continue to be implemented throughout the operation of the Modification, ensuring environmental performance remains consistent with existing approvals.

No additional management or mitigation measures are required.

7.0 Justification of modified project

The Port of Newcastle plays a critical role in NSW's renewable energy transition, serving as a gateway for the delivery and storage of key renewable energy infrastructure. The MPT is a central component of the Port's diversification strategy, enhancing operational efficiency and adaptability to evolving trade demands.

The purpose of the Proposed Modification is to provide greater flexibility for PON to store general cargo over a larger area within the MPT. Current conditions limit this flexibility by prescribing specific storage boundaries with time restrictions. The Proposed Modification seeks a permanent general cargo area, and removal of the prescriptive boundaries. This would enable storage across the MPT while continuing to support the handling of infrastructure components for the substantial volume of approved renewable energy projects within NSW.

The Proposed Modification would not result in any increase to the approved storage capacity of the MPT, air quality or noise emission limits, hours of operation, traffic loads or wastes received or generated. These aspects of the operation would remain unchanged, consistent with the approved development, and managed in accordance with existing conditions.

A qualitative assessment of the potential environmental impacts has been undertaken, demonstrating that the Proposed Modification would have negligible impacts.

In summary, the development would remain substantially the same as previously approved (up to and including Modification 9) and would result in minimal environmental impact. Accordingly, a modification to DA 293-08-00 is being sought under section 4.55(1A) of the EP&A Act.

The Proposed Modification would be managed in accordance with existing site management measures and environmental controls during operation, ensuring ongoing compliance with consent conditions and environmental management requirements.

8.0 References

AECOM. (2015). *Concept Stormwater Management Strategy.*

AECOM. (2025). *Mayfield Traffic Management Plan.*

DPIE. (2022). *State Significant development guidelines – preparing a modification report .*

NSWLEC. (1992). *Vacik Pty Ltd v Penrith City Council.*

NSWLEC. (1999). *Moto Projects No 2 Pty Limited v North Sydney Council .*

NSWLEC. (2008). *Scrap Realty Pty Ltd v Botany Bay City Council .*

NSWLEC. (2024). *Canterbury-Bankstown Council v Realize Architecture .*

PON. (2024). *Operational Environmental Manaement Plan - Mayfield No.4 Berth (DA 293-08-00).*

Qualtest. (2024). *Contaminated Land Management Plan.*

URS. (2000). *Development of a Multi Purpose Terminal and Remediation of the Closure Area - Environmental Impact Statement.*

Appendix A

Protected matters search tool

Appendix A Protected matters search tool

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 28-Jan-2026

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	107
Listed Migratory Species:	77

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	24
Commonwealth Heritage Places:	2
Listed Marine Species:	104
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	7
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	70
Key Ecological Features (Marine):	None
Biologically Important Areas:	12
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Hunter estuary wetlands	Within Ramsar site	In feature area

Commonwealth Marine Area [Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name	Buffer Status
Commonwealth Marine Areas (EPBC Act)	In buffer area only

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Kurri sand swamp woodland of the Sydney Basin bioregion	Endangered	Community may occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In buffer area only
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South	Endangered	Community likely to occur within area	In buffer area only

Community Name	Threatened Category	Presence Text	Buffer Status
East Queensland bioregions			

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In buffer area only
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In buffer area only
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area	In buffer area only
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area	In buffer area only
FISH			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
FROG			
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area	In feature area
Uperoleia mahonyi Mahony's Toadlet [89189]	Endangered	Species or species habitat known to occur within area	In buffer area only
MAMMAL			
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Eubalaena australis			
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Notamacropus parma			
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Nyctophilus corbeni			
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Angophora inopina			
Charmhaven Apple [64832]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Commersonia prostrata Dwarf Kerrawang [87152]	Endangered	Species or species habitat known to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area	In feature area
Diuris praecox Newcastle Doubletail [55086]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Eucalyptus parramattensis subsp. decadens Earp's Gum, Earp's Dirty Gum [56148]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Grevillea parviflora subsp. parviflora Small-flower Grevillea [64910]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Grevillea shiressii [19186]	Vulnerable	Species or species habitat known to occur within area	In feature area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Rutidosis heterogama Heath Wrinklewort [13132]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tetratheca juncea Black-eyed Susan [21407]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thelymitra adorata Wyong Sun Orchid [84724]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thismia clavarioides [90425]	Endangered	Species or species habitat may occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
SHARK			
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sphyrna lewini			
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus			
Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea			
Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calonectris leucomelas			
Streaked Shearwater [1077]		Species or species habitat known to occur within area	In feature area
Diomedea antipodensis			
Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora			
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans			
Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi			
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area	In feature area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]	Vulnerable	Breeding likely to occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche eremita			
Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Migratory Marine Species			
Balaenoptera borealis			
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni			
Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus			
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Caperea marginata			
Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharias taurus Grey Nurse Shark [64469]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Mobula alfredi as Manta alfredi](#) Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In feature area
[Mobula birostris as Manta birostris](#) Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Arenaria interpres](#) Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris falcinellus as Limicola falcinellus Broad-billed Sandpiper [91731]		Roosting known to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Roosting known to occur within area	In buffer area only
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
Calidris tenuirostris Great Knot [862]	Vulnerable	Roosting known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Australian Postal Corporation		
Lot 0 SP21821 [AGPR7127]	NSW	In buffer area only
Lot 1000 DP803086 [AGPR7039]	NSW	In buffer area only
Lot 1 DP221184 [AGPR7141]	NSW	In buffer area only
Lot 1 DP771579 [AGPR7147]	NSW	In buffer area only
Lot 226 DP700272 [AGPR7040]	NSW	In buffer area only
Lot 2 DP102966 [AGPR7178]	NSW	In buffer area only
Commonwealth Scientific and Industrial Research Organisation		
CSIRO Newcastle [AGPR325]	NSW	In buffer area only
CSIRO Newcastle [AGPR327]	NSW	In buffer area only
CSIRO Newcastle [AGPR326]	NSW	In buffer area only
Department of Climate Change, Energy, the Environment and Water		
Fort Wallace [CHL_105335]	NSW	In buffer area only
Nobbys Lighthouse [CHL_105373]	NSW	In buffer area only
Department of Defence		
ANC TS TOBRUK - Newcastle [DD_0025]	NSW	In buffer area only
Bullecourt Barracks - Adamstown [DD_0340]	NSW	In buffer area only
Lot 1 DP817695 [AGPR617]	NSW	In buffer area only
Lot 5 Plan 233358 [AGPR821]	NSW	In buffer area only
Newcastle Training Depot (Adamstown) [AGPR618]	NSW	In buffer area only
Newcastle Training Depot (Adamstown) [AGPR601]	NSW	In buffer area only
RAAF base Williamtown [AGPR656]	NSW	In buffer area only
RAAF base Williamtown [AGPR514]	NSW	In buffer area only
RAAF base Williamtown [AGPR512]	NSW	In buffer area only
RAAF base Williamtown [AGPR513]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
RAAF Williamtown [DD_0908]	NSW	In buffer area only
Department of Veterans' Affairs		
Lot 128 DP26927 [AGPR6251]	NSW	In buffer area only
Lot 78 DP255476 [AGPR6249]	NSW	In buffer area only

Commonwealth Heritage Places [Resource Information]

Name	State	Status	Buffer Status
Historic			
Fort Wallace	NSW	Listed place	In buffer area only
Nobbys Lighthouse	NSW	Listed place	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Roosting known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Breeding likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Roosting known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris falcinellus as Limicola falcinellus](#) Broad-billed Sandpiper [91731]		Roosting known to occur within area overfly marine area	In buffer area only
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area
[Calidris pugnax as Philomachus pugnax](#) Ruff [91256]		Roosting known to occur within area overfly marine area	In buffer area only
[Calidris ruficollis](#) Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
[Calidris tenuirostris](#) Great Knot [862]	Vulnerable	Roosting known to occur within area overfly marine area	In buffer area only
[Calonectris leucomelas](#) Streaked Shearwater [1077]		Species or species habitat known to occur within area	In feature area
[Charadrius bicinctus](#) Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In buffer area only
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Limosa limosa Black-tailed Godwit [845]	Endangered	Roosting known to occur within area overfly marine area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat known to occur within area	In feature area
Phaethon rubricauda Red-tailed Tropicbird [994]		Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]	Vulnerable	Roosting known to occur within area overfly marine area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Sternula albifrons as Sterna albifrons](#) Little Tern [82849]	Vulnerable	Breeding likely to occur within area	In buffer area only
[Symposiachrus trivirgatus as Monarcha trivirgatus](#) Spectacled Monarch [83946]		Species or species habitat likely to occur within area overfly marine area	In feature area
[Thalassarche bulleri](#) Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
[Thalassarche bulleri platei as Thalassarche sp. nov.](#) Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
[Thalassarche carteri](#) Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
[Thalassarche cauta](#) Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
[Thalassarche eremita](#) Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
[Thalassarche impavida](#) Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
[Thalassarche melanophris](#) Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
[Thalassarche salvini](#) Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Thalassarche steadi](#) White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Tringa brevipes as Heteroscelus brevipes](#) Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[Tringa stagnatilis](#) Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
[Xenus cinereus](#) Terek Sandpiper [59300]	Vulnerable	Roosting known to occur within area overfly marine area	In buffer area only
Fish			
[Acentronura tentaculata](#) Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
[Festucalex cinctus](#) Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
[Filicampus tigris](#) Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
[Heraldia nocturna](#) Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
[Hippichthys penicillus](#) Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
[Hippocampus abdominalis](#) Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Awabakal	Nature Reserve	NSW	In buffer area only
Glenrock	State Conservation Area	NSW	In buffer area only
Hexham Swamp	NRS Addition - Gazettal in Progress	NSW	In buffer area only
Hunter Wetlands	National Park	NSW	In buffer area only
Tilligerry	State Conservation Area	NSW	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Worimi	Regional Park	NSW	In buffer area only
Worimi	State Conservation Area	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
Lower North East	New South Wales	In feature area

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
1440- Newcastle Golf Course Alterations	2024/09899		Completed	In buffer area only
Eastern Rise Offshore Wind Project	2023/09544		Assessment	In buffer area only
Eastern Rise Offshore Wind Project Initial Marine Field Investigations	2023/09555		Completed	In buffer area only
M1 Motorway extension to Raymond Terrace, NSW	2018/8288		Post-Approval	In buffer area only
Northbank Enterprise Hub	2021/9058		Post-Approval	In buffer area only
Residential development, Hillsborough, NSW	2014/7217		Assessment	In buffer area only
Tomago Battery Energy Storage System (BESS)	2023/09521		Completed	In buffer area only
Controlled action				
Cabbage Tree Road Sand Quarry, Williamtown, NSW	2016/7852	Controlled Action	Post-Approval	In buffer area only
Construction and Sequential Filling of Waste Emplacement Facility	2008/4652	Controlled Action	Post-Approval	In buffer area only
Former Rifle Range Residential Development, Popplewell Road, Fern Bay, NSW	2017/7993	Controlled Action	Proposed Decision	In buffer area only
Gas Transmission Pipeline	2011/5917	Controlled Action	Completed	In buffer area only
Gloucester Coal Seam Methane Gas Project	2008/4432	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Hunter River Port and Transport Corridor	2001/419	Controlled Action	Completed	In buffer area only
Hunter River south arm dredging	2003/950	Controlled Action	Post-Approval	In feature area
Kooragang Island Waste Emplacement Facility - Area 2 Closure Works, NSW	2016/7670	Controlled Action	Post-Approval	In buffer area only
Kooragang Wetland Rehabilitation Project	2007/3220	Controlled Action	Post-Approval	In buffer area only
Newcastle gas storage facility project	2010/5752	Controlled Action	Post-Approval	In buffer area only
Newcastle inner city bypass Rankin Park to Jesmond NSW	2015/7550	Controlled Action	Post-Approval	In buffer area only
Newcastle LNG export facility	2011/5915	Controlled Action	Completed	In feature area
Newcastle Power Station Project, Tomago, NSW	2019/8425	Controlled Action	Post-Approval	In buffer area only
Nobby's Lighthouse redevelopment	2006/3179	Controlled Action	Completed	In buffer area only
Northbank Enterprise Hub, Industrial and Business Park	2010/5660	Controlled Action	Completed	In buffer area only
Port Site and Materials Handling Development	2001/242	Controlled Action	Completed	In feature area
Protech Cold Mill Facility	2001/274	Controlled Action	Post-Approval	In feature area
Queensland Hunter Gas Pipeline, approximately 825 km in length	2008/4483	Controlled Action	Completed	In feature area
Remediation Works, Kooragang island waste facility emplacement facility NSW	2011/5920	Controlled Action	Completed	In buffer area only
River Dredging Operations	2001/249	Controlled Action	Completed	In feature area
Rutile and Zircon Mining on Stockton Rifle Range	2000/8	Controlled Action	Post-Approval	In buffer area only
Steel Mill	2001/231	Controlled Action	Completed	In buffer area only
Terminal 4 Coal Export Terminal Project, Kooragang Island	2011/6029	Controlled Action	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Tomago Road Industrial Subdivision	2007/3343	Controlled Action	Post-Approval	In buffer area only
Williamtown Aerospace Park, industrial subdivision and development to service e	2009/5063	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
construction of a hydrological control structure at the mouth of Wader Creek and	2002/780	Not Controlled Action	Completed	In buffer area only
Construction of a Jetty	2002/784	Not Controlled Action	Completed	In buffer area only
Controlling Water Levels in Shortland Wetlands	2010/5468	Not Controlled Action	Completed	In buffer area only
Demolition of Ablutions Block, Snapper Island, NSW	2018/8303	Not Controlled Action	Completed	In buffer area only
Expansion to Kooragang Coal Terminal	2007/3352	Not Controlled Action	Completed	In buffer area only
Fort Scratchley refurbishment works	2005/2283	Not Controlled Action	Completed	In feature area
Fort Scratchley site remediation	2005/2075	Not Controlled Action	Completed	In feature area
Geological exploration and historical research of convict coal mines beneath For	2004/1421	Not Controlled Action	Completed	In feature area
Green & Golden Bell Frog Habitat Enhancement Project	2004/1795	Not Controlled Action	Completed	In feature area
Hexam Train Support Facility	2012/6285	Not Controlled Action	Completed	In buffer area only
Hexham Relief Roads Project	2012/6309	Not Controlled Action	Completed	In buffer area only
Hunter Natural Gas Pipeline	2004/1902	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Kooragang Coal Terminal Arrival Roads Stage 2 Upgrade, Newcastle, NSW	2014/7229	Not Controlled Action	Completed	In buffer area only
Nelson Bay Rd and Seaside Blvd intersection development, Nelson Bay, NSW	2019/8433	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Newcastle Inner City Bypass - Sandgate to Shortland	2007/3633	Not Controlled Action	Completed	In buffer area only
Nobbys Headland Redevelopment	2008/4672	Not Controlled Action	Completed	In buffer area only
Proposed maintenance and manufacturing facility to support industrial activities	2007/3592	Not Controlled Action	Completed	In buffer area only
Queensland Hunter Gas Pipeline, approximately 833 km in length	2008/4620	Not Controlled Action	Completed	In buffer area only
Richmond Vale Rail Trail	2019/8568	Not Controlled Action	Completed	In buffer area only
sale of property located at 96, Hunter Street	2003/1097	Not Controlled Action	Completed	In feature area
Sandgate Rail Grade Separation	2005/1948	Not Controlled Action	Completed	In buffer area only
Shorebird and wader habitat rehabilitation	2001/457	Not Controlled Action	Completed	In buffer area only
Stockpiling of lump coal up to 40,000 tonnes	2003/1304	Not Controlled Action	Completed	In buffer area only
Tomago Aluminium Rod & Conductor Manufacturing Facility	2011/6085	Not Controlled Action	Completed	In buffer area only
Tomago to Tomaree Electricity Supply Upgrade	2003/1023	Not Controlled Action	Completed	In feature area
Tomago Trunk Watermain Upgrade	2008/4049	Not Controlled Action	Completed	In buffer area only
Tomago Wetland Rehabilitation Project	2011/5894	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
2D marine seismic survey in PEP-11 permit area, NSW	2002/879	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Exploration Pilot Appraisal Program PEL 458	2011/6154	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Fort Wallace Residential Development Proposal, north of Newcastle, NSW	2017/7951	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
Kooragang Island coal export terminal	2006/2987	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Kooragang Island Waste Emplacement Facility Closure Works	2012/6464	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Rehabilitation of Hexham Swamp	2003/1244	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Star of the South Offshore Surveys	2019/8525	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
TransGrid 132kV Power Transmission Line	2002/794	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Wastewater Transfer Scheme	2011/5985	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In buffer area only
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Foraging	Known to occur	In feature area
Seabirds			
Ardenna carneipes Flesh-footed Shearwater [82404]	Foraging	Known to occur	In buffer area only
Ardenna grisea Sooty Shearwater [82651]	Foraging	Likely to occur	In feature area

Scientific Name	Behaviour	Presence	Buffer Status
Ardenna pacifica Wedge-tailed Shearwater [84292]	Foraging	Likely to occur	In feature area
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Likely to occur	In feature area
Diomedea exulans antipodensis Antipodean Albatross [82269]	Foraging	Known to occur	In buffer area only
Procellaria parkinsoni Black Petrel [1048]	Foraging	Likely to occur	In buffer area only
Sharks			
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Eubalaena australis Southern Right Whale [40]	Migration		In buffer area only
Eubalaena australis Southern Right Whale [40]	Reproduction		In buffer area only
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur	In buffer area only

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Hunter	Northern Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix B

Traffic Monitoring Data

Appendix B Traffic Monitoring Data

Mayfield Concept Plan Approval 09_0096

Bi-Monthly Traffic Management Report

Published March 2026 – for January and February 2026 traffic

In accordance with Schedule 3 Condition 2.3 of the Mayfield Concept Plan (MCP) Approval, projects associated with the Concept Plan shall not exceed the total truck movement limits presented in Table 1 below, subject to identified exceptions which will be considered in future project assessments:

Table 1: Mayfield Concept Approval Truck Movement Criteria for Initial Stage

Permitted Truck Movements Per Annum	462,104
Permitted Truck Movements per day	1,268
Permitted Hourly Truck Movements in Peak Periods	95

To ensure compliance with these provisions, PON requires tenants and licensees operating under the MCP Approval to provide truck movement information on a bi-monthly schedule. There are currently two projects operating under the MCP Approval:

- Stolthaven SSD 6664, commencing May 2016
- Mayfield Cargo Storage Facility DA 8137, commencing July 2017

Total truck movements per annum are reported using a rolling cumulative total over the preceding 12-month period. The total daily truck movements are reported using a per day average across the twelve-month period. The total hourly truck movements during peak periods are reported using data sourced from an automatic traffic counter on site.

Figures 1, 2 and 3 shows the actual number truck movements during the reporting period against the remaining number that is permitted, for the different time periods (annual, daily, during peak period). The figures show that the number of truck movements associated with the development are below the permitted volume.

Figure 1: Annual Truck Movements [Rolling Cumulative Total]

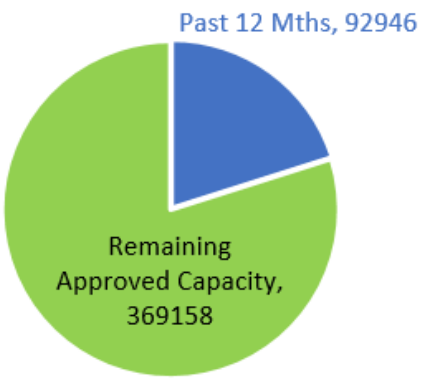


Figure 2: Average No. of Daily Truck Movements

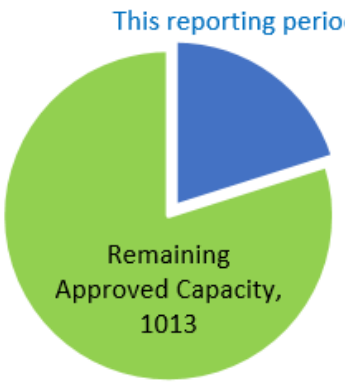
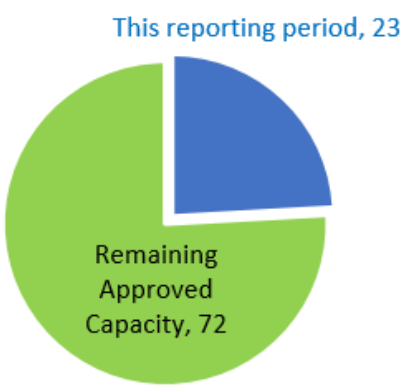


Figure 3: Average No. of Truck Movements During Peak Period



Appendix C

Traffic Management Plan

Appendix C Traffic Management Plan

Port of Newcastle
16-Nov-2015

Traffic Management Plan

Mayfield Concept Plan

Traffic Management Plan

Mayfield Concept Plan

Client: Port of Newcastle

ABN: 97 539 122 070

Prepared by

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Quality Information

Document Traffic Management Plan

Ref 60327128

Date 16-Nov-2015

Prepared by Eric Wu

Reviewed by Nick Bernard

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	07-Aug-15	Structure and outline for review	Simon Murphy Project Manager	
B	20-Aug-15	Draft for review	Andy Yung Associate Director	
D	28-Aug-2015	Draft for review	Andy Yung Associate Director	
E	16-Nov-2015	Final	Simon Murphy Project Manager	

Table of Contents

List of Tables

List of Figures

1.0 Introduction

1.1 Purpose and scope

This Traffic Management Plan (TMP) applies to the Port of Newcastle (PON) Mayfield Concept Plan site. The purpose of the TMP is to provide a framework for the coordinated management of traffic travel to and from and within the site. The TMP will provide a comprehensive approach in terms of devices and measures to facilitate port-related traffic movements.

This document has been developed to outline how the PON intends to demonstrate compliance with the Minister's Conditions of Approval, namely Condition 2.5:

"*The Proponent shall prepare and implement a Traffic Management Plan for the Concept Plan site in consultation with RMS, HDC, Council, adjoining land owners and the local community to provide a framework for the coordinated management of traffic to, from, and within the Concept Plan site.*

The Plan shall include traffic management devices and measures to facilitate the orderly movement of port related traffic movement to/from the road network, and shall include but not necessarily be limited to:

a) measures to ensure heavy vehicle access to and from the site will be primarily along the routes shown in Attachment A to this approval;

b) measures to minimise port freight movements inside am and pm peak traffic periods;

c) measures to encourage the equal distribution of truck movements between the Industrial Drive/George Street and Industrial Drive/Ingall Street intersections;

d) measures to prevent heavy vehicles accessing residential streets and areas within the vicinity of the site and to maintain the residential amenity of the local community; and

e) Measures to encourage staff access to the site by means other than private vehicles.

The Plan shall be prepared and implemented prior to the operation of any projects associated with this Concept Plan approval and shall be updated prior to the commencement of any subsequent project approvals associated with this Concept Plan approval."[1]

The Stolthaven Bulk Fuel Facility Stage 2 SSD approval was the first approval under the Mayfield Concept Plan. The commencement of operation of the two new diesel storage tanks (to be constructed as part of the Stolthaven Bulk Fuel Facility Stage 2 SSD approval) would therefore be the first project operation associated with the Concept plan approval. The requirement is thus for the TMP to be prepared and implemented prior to the new diesel storage tanks starting operation.

Stolthaven are currently operating under a Traffic Management Plan, which was a requirement of Stolthaven's prior Part 3A approval, which preceded the Mayfield Concept Plan approval.

Table 1.1 outlines the requirements and provides a cross-reference to the relevant section(s) of this report which address these requirements.

Table 1.1 Conditions of Approval requirements for Traffic Management Plan

Conditions of Approval Requirements	Where addressed
• Measures to ensure heavy vehicle access to and from the site will be primarily along the routes shown in Attachment A to this approval;	• Section 3.3
• Measures to minimise port freight movements inside AM and PM peak traffic periods;	• Section 3.4
• Measures to encourage the equal distribution of truck movements between the Industrial Drive/George Street and Industrial Drive/Ingall Street intersections;	• Section 3.5
• Measures to prevent heavy vehicles accessing residential streets and areas within the vicinity of the site and to maintain the residential amenity of the local community; and	• Section 3.6
• Measures to encourage staff access to the site by means other than private vehicles.	• Section 3.7

Source: Department of Planning & Environment, 5 March 2015

[1] Mayfield Concept Plan Project Approval (MP0 9_0096), latest modification approved on 12 December 2014

1.2 Consultation process

The consultation for this project includes:

- Department of Planning and Environment;
- Roads and Maritime Services;
- Government Property NSW*;
- Newcastle City Council; and
- Adjoining landowners.

Note: Condition 2.5 of the Concept Approval includes consultation with the Hunter Development Corporation (HDC) as a requirement, due to HDC being in control of adjoining lands (Intertrade Site) at the time of the Concept Approvals issue. As this land is now under the control of Government Property NSW, they would now be consulted in place of HDC.

2.0 Site description

2.1 Strategic context and road network

Figure 1 indicates the strategic context of the Mayfield site and the surrounding road network.

Figure 1 Strategic context

2.1.1 Strategic road network

The site is located on the former BHP Steelworks Site, approximately 5km north-west of Newcastle CBD. There are strategic road corridors close to the site, including the Pacific Motorway, Pacific Highway, New England Highway and Hunter Expressway.

M1 Pacific Motorway (previously known as the F3 Sydney – Newcastle Freeway)

The M1 Pacific Motorway is a 127km motorway linking Sydney to the Central Coast, Newcastle and Hunter Regions. The motorway alternates between two and three lanes in each direction for its length. The motorway has a speed limit varying between 80 and 110km/h.

A1 Pacific Highway

The A1 Pacific Highway is a 1,025km major transport route which links Sydney and Brisbane along the east coast of Australia. The section of the A1 Pacific Highway in the vicinity of Mayfield has two lanes in each direction and a speed limit that varies between 60km/h and 80km/h.

A43 New England Highway

The A43 New England Highway connects to the A1 Pacific Highway at Hexham and travels west towards Maitland. The majority of the route is single carriageway; however, between Hexham and Maitland, it has two lanes in each direction. For most of its length the A43 New England Highway has a 100km/h speed limit.

M15 Hunter Expressway

The M15 Hunter Expressway is a 40km, four-lane, dual carriageway freeway link between the M1 Pacific Motorway near Seahampton and the New England Highway, west of Branxton. Opened in March 2014, the M15 Hunter Expressway provides a new east-west link between the Lower Hunter and Newcastle. Preliminary traffic data indicates that other key routes, particularly the New England Highway near Maitland, have greatly benefited since the expressway opened, with major decreases in traffic on the New England Highway, with a 45 per cent reduction through Lochinvar and about a 25 per cent reduction through East Maitland and Maitland[2].

2.1.2 Local road network

The site is located within the existing Mayfield industrial area south of the Hunter River, as illustrated in Figure 2. Access to the facility is via the Industrial Drive intersection with Ingall Street and George Street.

Industrial Drive

Industrial Drive is a major four-lane, divided, classified road providing connections to the A1 Pacific Highway and the north bank of the South Arm of the Hunter River. It is a major link between Maitland and Newcastle CBD providing access to the Honeysuckle Precinct and is the preferred alternative to the A1 Pacific Highway for southbound traffic. It is a B-Double approved vehicle route signposted at 80km/h and operates as a public transport corridor for Bus Routes 104 and 118.

Ingall Street

Ingall Street provides access to the site from Industrial Drive. To the south of Industrial Drive, it is an undivided, two-lane, two-way collector road connecting Industrial Drive to the Pacific Highway through a predominantly residential area. It is sign posted at 50km/h and 40km/h to the north and south of Industrial Drive respectively.

George Street

George Street is a four lane road with two traffic lanes and two parking lanes, aligned mainly to the west of Industrial Drive. It is signed at 50km/h and runs through a residential area in Mayfield East. To the east of Industrial Drive, George Street connects immediately to Selwyn Street, which runs adjacent to the rail line to the south of the site, and provides access to the site. Selwyn Street is initially two lanes in each direction and then narrows to one lane in each direction, east of the rail level crossing.

Bull Street

Bull Street has two sections. The eastern part is a one way road connects Industrial Drive and Ingall Street. It provides access for Industrial Drive eastbound traffic to local property and intersects with Ingall Street at its east

[2] http://www.rms.nsw.gov.au/projects/hunter/the-hunter-expressway/index.html, accessed August 2015

end. It has a speed limit of 50km/h. The existing geometry of Bull Street does not currently enable large vehicles to entre Bull Street from Industrial Drive and turn left into Steelworks Road.

The western part connects Gregson Avenue and Industrial Drive. It is a two way local road also with a speed limit of 50km/h.

2.1.3 Internal road network

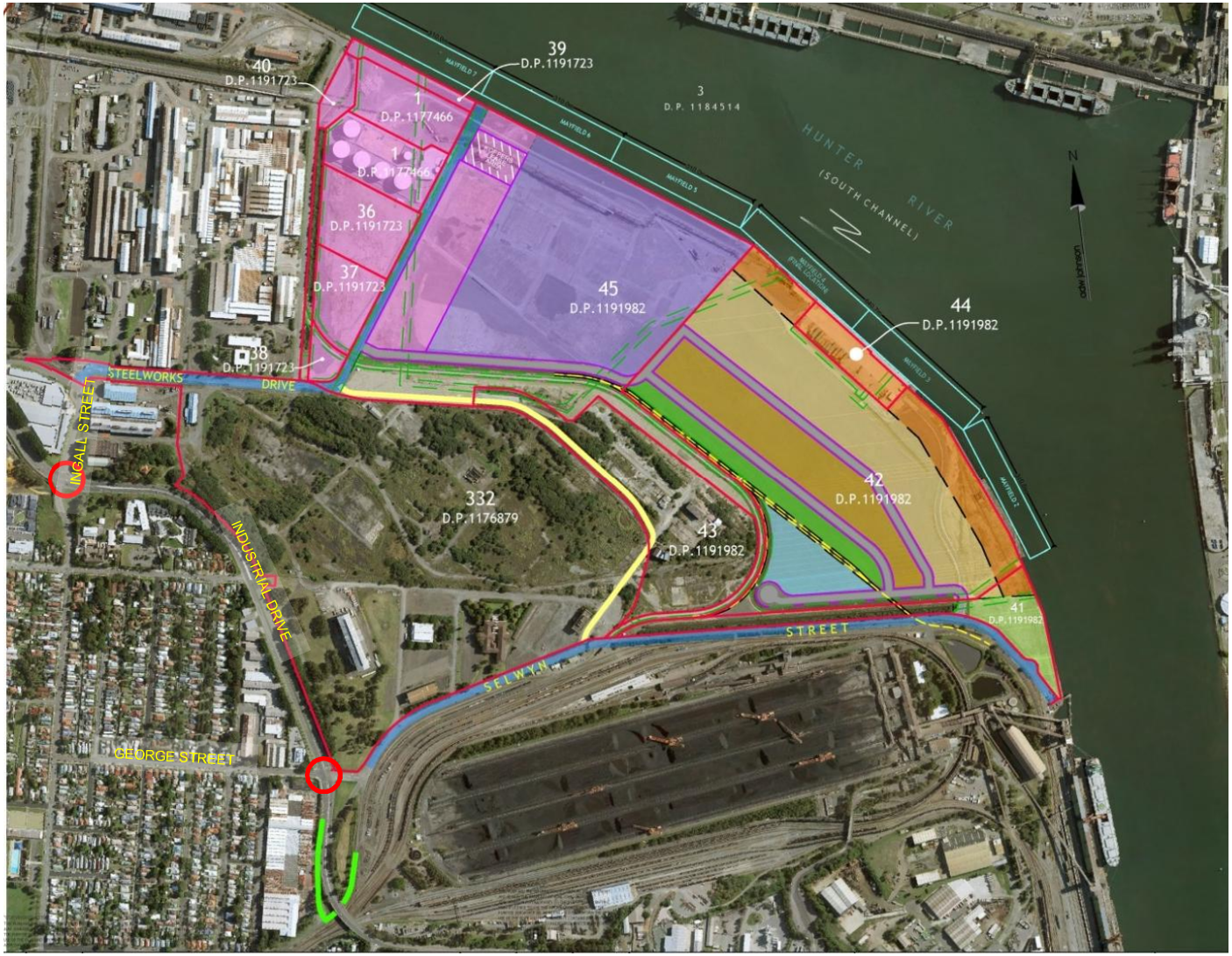
Steelworks Drive

Steelworks Drive is an internal road connects Ingall Street and extends into the project site. It would connects Selwyn Street potentially and provide access for vehicles to/from the site.

Selwyn Street

Selwyn Street is also an internal road which connects George Street and provides access for the traffic off Industrial Drive into the project site. It is a two way road with one lane each way, and it has a speed limit of 50km/h.

Figure 2 Site location and local road network



Source: Port of Newcastle, 31 July 2015 (amended by AECOM)

2.1.4 Road capacity and traffic volumes

Table 2.1 presents the average 2010 weekday peak hour traffic volumes at the locations along the planned haulage routes. An indication of the roadway midblock capacity at each location is also provided, using the lane capacities provided in Austroads Guide to Traffic Management: Part 3 Traffic Studies Analysis, 2009.

Table 2.1 Current (2010) hourly midblock counts along haulage route

ID	Road	Location	Direction	Average weekday peak hour count (2010)		Capacity (vehs/hr)
				AM Peak	PM Peak	
1	Industrial Drive	Mayfield, north west of Woodstock St	Two way	3,861	3,732	3,800
2	Industrial Drive	Mayfield West, west of Werribi St	EB	1,536	1,324	1,900
			WB	1,397	1,512	1,900
3	Pacific Highway	B/w Industrial Dr and Wallsend Rd	Two way*	3,148	3,294	6,800
4	Pacific Highway	Hexham, south of Hexham Bridge	Two way**	3,795	4,134	6,800
5	New England Highway	Hexham, North of Pacific Hwy	NB	1,758	2,862	4,000
			SB	2,834	2,158	4,000
6	John Renshaw Drive	Beresfield, west of New England Hwy	EB	1,394	1,225	4,000
			WB	1,187	1,470	4,000
7	F3 Freeway	South of John Renshaw Drive	NB	1,653	1,329	4,000
			SB	1,125	1,677	4,000
8	Pacific Highway	North of Hexham Bridge	Two-way	3,162	3,373	6,800

*2011 counts **2009 counts

2.2 Site access

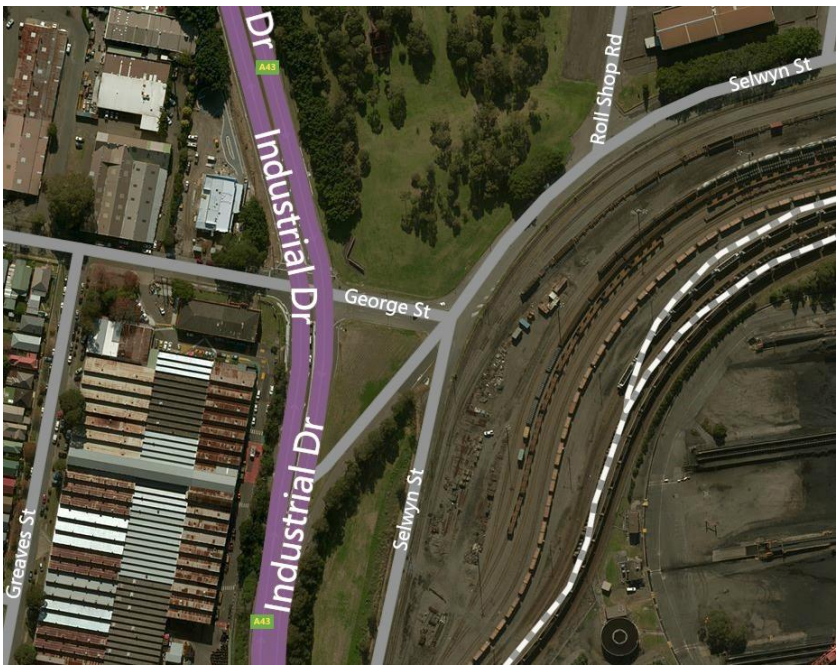
Access to the site is provided at two traffic-signal controlled intersections, namely:

- Industrial Drive / Ingall Street (see Figure 3); and
- Industrial Drive / George Street (see Figure 4).

Figure 3 Industrial Drive and Ingall Street Site Access

Source: AECOM NSW Data Hub

Figure 4 Industrial Drive and George Street Site Access



Source: AECOM NSW Data Hub

Though Bull Street provides access to the site from Industrial Drive from West, it is unlikely for site traffic using Bull Street to access the site since it mainly serves local property traffic in and out.

2.3 Concept Plan description

2.3.1 General

PON is seeking to develop the Mayfield Concept Plan area for port-related activities to accommodate a diverse range of cargo handling infrastructure and the promotion of trade. The site will initially be developed for bulk liquids. A multi-purpose cargo facility focused around bulk materials and general cargo has been identified as a future opportunity. The site is to be developed progressively in stages to accommodate future trade needs over a 20-25 year timeframe.

2.3.2 Vehicle generation

The Concept Plan Approval (MP0 9_0096 – updated 12 December 2014) established limits on traffic movements and cargo volumes being moved by road. These limits are presented in **Table 2.2** and were established with the objective of the projects associated with the concept plan being operated so as to not exceed the capacity of the transport network, including the local, regional and State road network.

Table 2.2 Total truck movements limits (two-way)

Stage	Total Truck Movements per annual	Total Truck Movements per day	Total Hourly Truck Movements in peak hour
Initial Stage	462,104	1,268	95
Intermediate Stage	773,438	2,120	159
Ultimate Stage	1,017,882	2,790	209

Source: Mayfield Concept Plan Project Approval (MP0 9_0096), 12 December 2014

2.3.3 Transport infrastructure upgrades

To accommodate the new generated traffic together with background traffic on the existing road corridor, transport infrastructure upgrades were identified for road and rail access and included in the Conditions of Approval.

For road infrastructure upgrades, a road link is to be provided to strengthen the connection of Ingall Street and Selwyn Street. As detailed below, the timing for the provision of this link road would be subject to consideration of the factors listed in Condition 2.9 of the Concept Plan approval. In addition, three intersections would be upgraded to accommodate the forecast traffic increase. For rail infrastructure, the main purpose is to increase rail mode share to and from the site by upgrading the existing facility and the construction of a new rail line to provide direct access to the site.

These transport infrastructure upgrades are described further in the Conditions of Approval. The final timing, staging, scope and design of these identified transport infrastructure upgrades may be revised by subsequent project approvals where the matters outlined in requirement 2.9 of the Mayfield Concept Approval, where relevant, have been considered. These matters include:

a) *In relation to road infrastructure:*
   i. *the level of traffic generated by the operation of the project and the consideration of existing and approved development both on and adjoining the site (including the timing of approved development and access to these sites, where relevant);*
   ii. *satisfactory performance of the intersections, including Level of Service, Degree of Saturation, and queue lengths;*
   iii. *traffic management measures designed to reduce vehicle movements or distribute movements between the intersections;*
   iv. *safe access between and to precincts both from within and outside the site, including the consideration of the Port Emergency Response Plan; and*
   v. *consultation with Transport for NSW, the RMS, HDC, Council and adjoining land owners*
b) *In relation to rail infrastructure:*
   i. *the objective of increasing freight movement by rail to and from the Concept Plan site and the optimisation of rail operations;*

ii. minimising the physical and operational impacts on other rail operations within the vicinity of the site;

iii. availability of additional freight train paths and capacity; and

iv. consultation with Transport for NSW, ARTC, rail operators within the vicinity of the site and adjoining land owners.

3.0 Operational Traffic Management Plan

3.1 Objectives

The objectives of the Traffic Management Plan (TMP) are to develop measures to:

- Ensure heavy vehicle access to and from the site primarily along the routes shown in **Figure 5**;
- Minimise port freight movements inside AM and PM peak traffic periods;
- Encourage the equal distribution of truck movements between the Industrial Drive / George Street and Industrial Drive / Ingall Street intersections;
- Prevent heavy vehicles accessing residential streets and areas within the vicinity of the site and to maintain the residential amenity of the local community; and
- Encouraging staff access to the site by means of other than private vehicles. It is noted that Port Policy does not allow access to the site other than via vehicular access.

It is intended for the TMP to be implemented prior to the operation of any projects associated with the Concept Plan approval. It is intended that the TMP would be updated to respond to issues arising during subsequent monitoring of the site operations and prior to the commencement of any subsequent project approvals.

3.2 Vehicle types

Depending on the type of port development that occurs, vehicles accessing the site would generally be:

- Trucks (heavy and light commercial); and
- Cars, vans, utilities and delivery vans.

The trucks would be used to transport materials such as bulk liquids and general cargo to and from the site. Light vehicles may include staff vehicle, special use vehicle and security vehicles.

3.3 Restricting heavy vehicles to approved routes

The planned heavy vehicle routes to and from the site are shown in Figure 5. Depending on origin / destination, the heavy vehicles would use the New England Highway, Hunter Expressway or the Pacific Motorway to then access Industrial Drive to access to the Mayfield site. The planned routes are all on Primary Freight Roads according to the NSW *Metropolitan Road Freight Hierarchy on the State Road Network Practice Note*, June 2011.

Individual project operators within the Mayfield Concept Plan area would be required to ensure that all drivers visiting the site must be site inducted to a level suitable for each operation. For example truck drivers accessing a fuel terminal would be required to be inducted into the terminal and comply with all the requirements of this TMP prior to driving on site. Evidence of induction together with authorisation for specific type and quantity of loads (inbound and outbound) would be required for each visit to access the facility. Such evidence should be provided to PON on request. The access and egress routes for heavy vehicles would be part of the driver induction. Drivers who do not comply with these requirements would place the relevant operator/tenant in breach of their tenure compliance obligations with PON.

Driver compliance with using the approved routes would be monitored by individual operators/tenants with evidence of compliance details of any non-compliances to be provided to PON, as part of the periodical reporting requirements to PON.

3.4 Minimising port-related truck movements in peak hours

Due to the potential for peak hour movements to be cumulatively high across the development area, traffic management plans for individual sites need to include consideration of mechanisms to minimise peak hour movements. For example:

- Staggered working or shift hours to minimise staff movement during peak times;

- Driver inductions that highlight the need to minimise peak hour movements from each project operator /tenant during peak times;
- Details of any devices used to restrict vehicle movements. For example physical barriers, manned gates and boom gates.

This would control site access in peak hours and gate records would include times of entry / exit. PON and/or the project operators may implement pre-booking allocated time slots for truck arrivals to reduce the concentration of truck movements and minimise entry / exit in peak hours. Project operators would be responsible for determining appropriate shift staggers across all developments sites and advising these to PON.

It should be noted that PON reserves the right to implement access control of the Concept Plan area. Arrium (OneSteel) currently operates a gatehouse at the Ingall Street/Steelworks Rd access point to the site. Selwyn St currently has no access controls installed. Mayfield berth No. 4, which is currently accessed via Selwyn St utilises an automated gate and manned security entrance point to control access. Should PON determine additional access controls are required; operators/ tenants would be required to comply with such controls in accordance with their lease/licence obligations.

Future site specific access controls can be installed by individual operators/tenants as per their operational requirements and in consultation with PON.

Figure 5 Heavy Vehicle Routes

Source: Attachment A of the consent conditions (09/0096)

3.5 Encouraging equal distribution of truck movements at industrial Drive intersections

Allocation to the two site accesses would be on the basis of lease area location and/or truck generation. This would need to be evaluated on a site-wide basis and development of the Concept Plan progressed to ensure roughly equal distribution between the two intersections. Individual operator Traffic Management Plan should nominate indicative breakdowns of intended traffic loadings per intersection in discussion with PON.

Again, driver site induction would be key to communicate the allocation of gate entry points. Vehicle identification of trucks accessing the port at the access point would enable compliance with the allocation. Pre-booking of allocated time slots for truck arrivals at a particular gate would also compel compliance.

3.6 Preventing trucks using residential streets

The two sections of residential streets that may be used by trucks would be Ingall Street and George Street opposite the site entry points off Industrial Drive.

Driver inductions must include the requirement to prevent all heavy vehicle traffic accessing or egressing the site to avoid local /residential roads. Any deviation from this requirement would require the tenant to provide justification to PON and Council for moving large vehicles on local roads. Drivers should not transport heavy vehicles or loads outside of RMS's identified dedicated heavy vehicle network. It is the responsibility of individual operators/tenants to ensure that any relevant RMS approvals have been obtained prior to any heavy vehicle traffic accessing or egressing the site.

As noted in **Section 3.3**, the access and egress routes for heavy vehicles must be required by the driver induction. Drivers who do not comply with these requirements would place the relevant operator/tenant in breach of their tenure compliance obligations with PON. Council also previously identified a number of Local Area Traffic Management (LATM) works which should be considered appropriate to ensure the impact on neighbouring local roads and residential areas is minimised.

Driver compliance with using the approved routes would be monitored as part of the Traffic Monitoring and Review Plan (see separate document), as prescribed in the Concept Plan Conditions of Approval.

3.7 Encouraging staff to travel by modes other than car

A Workplace Travel Plan (WTP) would be developed by operators/ tenants as a component of individual site specific traffic management plans to manage travel demand by staff at the site. Key initiatives and measures that could be developed to improve non-car travel methods include:

- Cycling:
  - On-site infrastructure (cycle paths / routes to appropriately located end-of-trip facilities);
  - Establishment of a Bicycle Consultation Group; and
  - End-of-trip facilities (appropriately located secure bicycle storage, lockers and showers)
- Walking:
  - Production of local walking map; and
  - New pedestrian infrastructure (paths / routes to appropriately located end-of-trip facilities).
- Public transport:
  - Reimbursement of public transport costs; and
  - Public transport services tailored to meet employee needs (e.g. shuttle bus transfers / diversion of scheduled services into the site, where warranted by patronage).
- Communication and information:
  - Personalised journey planner;
  - Pocket travel guide; and
  - Employee travel clinics.

It would also be appropriate to ensure that those who have to travel by car can do so in an environmentally sustainable manner. Other measures such as a car share or carpooling schemes would also be suitable.

It is noted that a WTP may have limited impact on some shift workers because late night and early morning travel may not be conducive to public transport or active transport modes.

It is also noted that PON Workplace Health and Safety Policy does not allow access to the site other than via vehicular access, therefore the location of any end-of-trip facilities would need to be reviewed for appropriateness.

3.8 Summary

Key strategies include the following:

- Compulsory driver induction provided by individual project operators / tenants that would include:
    - Hours of operation;
    - Approved heavy vehicle access routes, including not using residential streets;
    - Peak hour restrictions;
    - Allocation of gate entry to distribute traffic between the two entry points;
    - Others, such as site security arrangements, wheel washing protocol, any site-specific access road constraints and safety issues, speed limits and limiting of compression braking in sensitive areas; and
    - Compliance with the relevant aspects of this TMP.

  Driver site induction would need to be implemented regularly to ensure drivers comply.
- Pre-booking of time slots for truck arrivals;
- Allocated designated resources for the control of deliveries including:
    - Logistic Manager;
    - In vehicle supervisor;
    - On site traffic controllers; and
    - Security Guards.
- Identify adjacent road load limits to prevent heavy vehicles accessing residential streets to maintain the residential amenity of the local community; and
- Apply work travel plans for staff to discourage private vehicle use.

4.0 Plan compliance

To monitor compliance with the TMP and manage any complaints, the following would be implemented by each operator/tenant and PON in the Concept Plan area:

- Monitor / survey for evidence of non-compliances in accordance with the specific approval requirements for each individual operation;
- Each operator/tenant is to maintain a register of complaints or non-compliances. This is to be made available to PON on request and be included in the periodical compliance reports required to be provided to PON;
- All incidents must be reported to PON and other relevant agencies or stakeholders immediately along with specific details of the incident and planned response; and
- An incident report which details corrective actions would be provided to PON by the operator/tenant within one month of the incident.
-

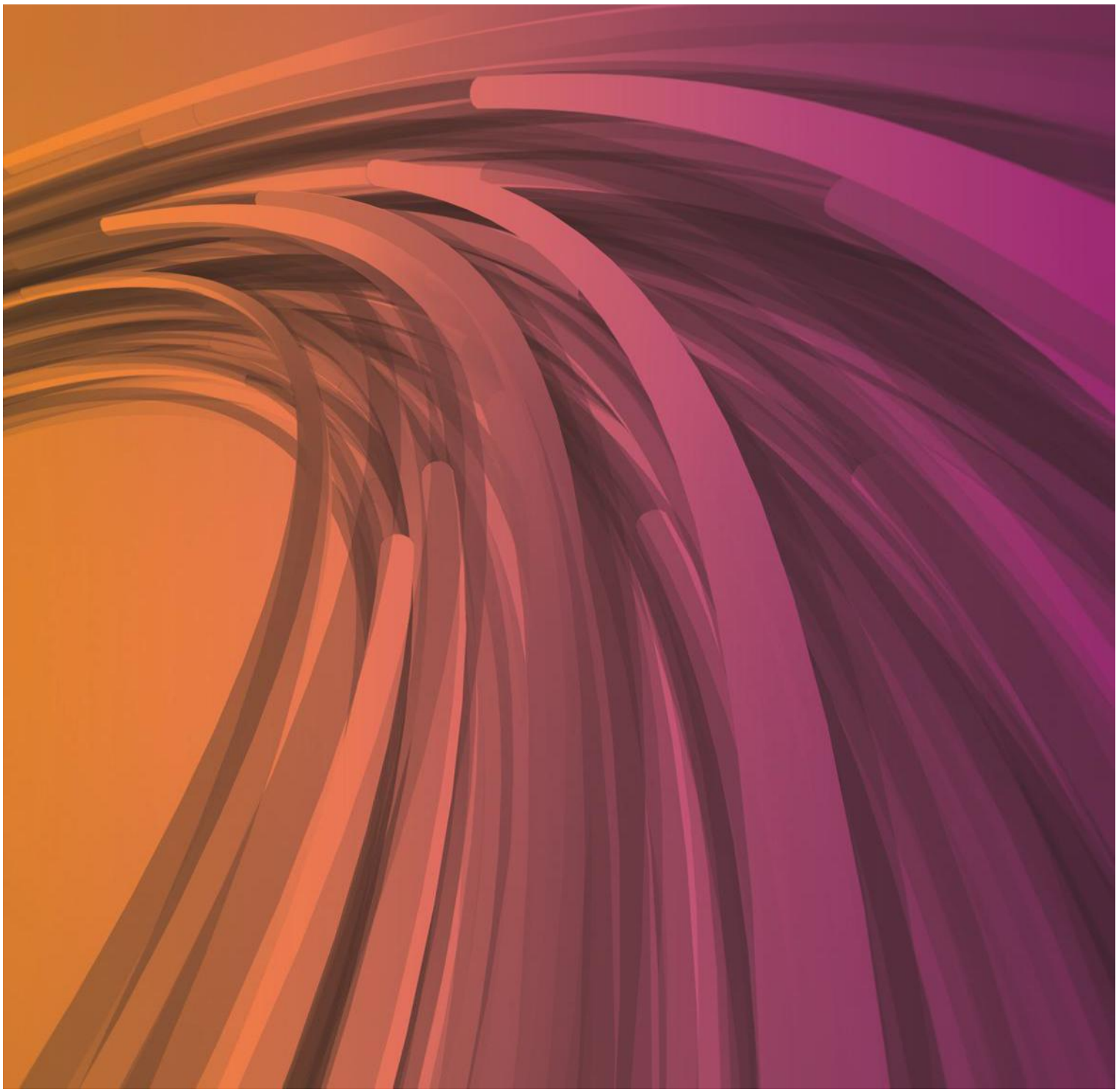
Appendix D

Concept Stormwater Management Strategy

Appendix D Concept Stormwater Management Strategy

Concept Stormwater Management Strategy

Mayfield Concept Plan



Concept Stormwater Management Strategy

Mayfield Concept Plan

Client: Port of Newcastle

ABN: 13 165 332 990

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Quality Information

Document Concept Stormwater Management Strategy

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Reviewed by Melanie Collett

Revision History

Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	16-May-2014	Draft for Client Review	Simon Murphy – Senior Environmental Planner	
B	30-May-2014	Revised Draft	Simon Murphy Senior Environmental Planner	
C	27-Feb-2015	Response to Dept. Planning Review	Simon Murphy Senior Environmental Planner	
D	9-Jul-2015	Final Report	Simon Murphy Senior Environmental Planner	

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Table of Contents

List of Tables

List of Figures

Abbreviations

AEP	Annual Exceedance Probability
AHD	Australian height datum
CEMP	Construction Environmental Management Plan
CSMP	Contaminated Site Management Plan (Hunter Development Corporation 2014)
DCP 2012	Newcastle Development Control Plan 2012
DECCW*	Department of Environment Climate Change and Water (*now renamed*)
DIPNR*	Department of Infrastructure, Planning and Natural Resources
DP&E	Department of Planning and Environment
EA	Environmental Assessment (AECOM 2010)
EPA	Environment Protection Authority
EPL	Environment Protection Licence
GPT	Gross Pollutant Trap
HDC	Hunter Development Corporation
IIP	Intertrade Industrial Park
km	kilometres
LGA	Local Government Area
m	metres
mm	millimetres
NSW	New South Wales
NTU	Nephelometric Turbidity Units
OEMP	Operational Environmental Management Plan
PAH	Polycyclic Aromatic Hydrocarbons
PMF	Probable Maximum Flood
PON	Port of Newcastle
PWCS	Port Waratah Coal Services
SWMP	Soil And Water Management Plan
TPH	Total Petroleum Hydrocarbons
HDPE	High Density Polyethylene

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1.0 Introduction

1.1 Purpose

This Concept Stormwater Management Strategy has been prepared to provide a framework for the coordinated management of stormwater and flooding across for the future development of the Mayfield port-side lands (formerly known as the Mayfield Closure Area). The site is the subject of a Concept Plan Approval (09_0096) granted by the Minister for Planning in 2012 under the *Environmental Planning and Assessment Act 1979* (EP&A Act). Subsequent to the approval of the Concept Plan, Newcastle Ports Corporation (PON) sought a modification of the Concept Plan approval under Section 75W of the EP&A Act. The modification sought to:

- Remove reference to prescriptive precinct or cargo-based road and rail traffic limits and replace these with reference to overall road and rail traffic limits for the site.
- Replace reference to developing maximum sound power levels for each precinct with development of an overall Site Noise Model which is a more sophisticated and robust method of assessing cumulative noise impacts.
- Ensure the approval appropriately reflects the original intent of the Concept Plan, which was to allow flexibility for future development of the site provided that the overall environmental limits established by the Concept Plan were not exceeded.

The modification reflected changing circumstances including: a shift in NSW government policy regarding the strategic role of the Newcastle Port; significant changes in market drivers relating to the NSW fuel supply chain; and growth in global export demand for bulk commodities such as grain and cement products.

The modification was approved by the Minister for Planning and Infrastructure in March 2014.

This Concept Stormwater Management Strategy has been prepared to meet the requirements of the Concept Plan Approval, specifically Condition 2.1(n) and 2.21.

Patterson Britton & Partners Pty Ltd prepared a Preliminary Design Stormwater Strategy (2006) for the preliminary design of the site earthworks and drainage that was implemented for the remediation works of the Closure Area. The strategy was based on conceptual layout of road and stormwater networks to prove the earthworks design was compatible with technically viable solutions for the future roads and drains, and consistent with Newcastle City Council (now known as The City of Newcastle) design criteria.

This Concept Stormwater Management Plan has been prepared to consolidate the principles developed in the Preliminary Strategy (Patterson Britton 2006) and Environmental Assessment (AECOM 2010), as well as the requirements of the Concept Plan Approval.

Being a Concept Plan Approval, it is noted that the proposed site layout and uses are indicative and may change over time in response to market demand and government policy. Individual developments will be required to obtain Project Approval from the Department of Planning and Environment (DP&E) prior to commencement of construction and operation. However, these developments will need to be consistent with the principles in this Concept Stormwater Management Strategy, The City of Newcastle design criteria and principles outlined in the Contaminated Site Management Plan (CSMP).

1.2 Background

The site is located within an existing industrial area of the Port of Newcastle, adjoining the South Arm of the Hunter River. The land comprises 90 hectares and is located on the former BHP Steelworks site. Following closure of the steelworks in 1999, the site has been progressively demolished and remediated, with the remediation works being completed in 2012.

The initial Concept Plan Approval (09_0096) for the redevelopment of the site included a conceptual layout of anticipated port-related activities, with five key land-use precincts. The concept plan also includes supporting road and rail infrastructure to service the above precincts. A full description of the concept site development is provided in the Environmental Assessment (AECOM, July 2010).

1.3 Strategy Overview

The Concept Plan Approval outlines the requirements for the preparation of this Stormwater Management Strategy (condition 2.21), and that future applications for Project Approval be supported by a hydrological assessment in accordance with Condition 2.1(h), namely:

*A **Hydrological Assessment** that assesses the potential on and off site hydrological impacts of the project and the projects interaction with the site hydrological objectives. The assessment shall:*

i. Consider flooding coastal risk impacts on the project and adjoining land uses within, adjoining and within the locality of the site, including the consideration of climate change risks, and the NSW sea level rise planning benchmarks;

ii. Consider surface and storm water impacts, including the need to isolate stormwater from land contamination and the local groundwater table;

iii. Consider impacts to groundwater, including the need to isolate stormwater from land contamination and the local groundwater table;

iv. Detail flooding, surface and storm water, groundwater and water quality management and monitoring measures, including the maintenance of measures and the application of first flush collection systems and Water Sensitive Urban Design measures;

v. Consideration of the Stormwater Management Strategy required under this approval; [this document] and

vi. Relevant documents including the Floodplain Development Manual (DIPNR, 2005), Flood Risk Management Guide (DECCW, 2010) and Newcastle Development Control Plan 2005.

This Concept Stormwater Strategy has been prepared in response to Condition 2.21 of the Concept Plan Approval, the requirements of which are detailed in **Table 1** in addition to the relevant sections of this report where the necessary information is provided.

Table 1 Requirements of Condition 2.21

DP&E Comment	Addressed in report
2.21 The Proponent shall prepare a Stormwater Management Strategy for the Concept Plan site to provide a framework for the coordinated management of storm water and flood risks across the site and within precincts and to facilitate the continual improvement in the quality of stormwater discharge to the South Arm of the Hunter River and a reduction in flooding impacts to land uses within and surrounding the site. The Strategy shall include:	The Stormwater Management Strategy has been prepared to provide an overarching framework for the management of stormwater across the Concept Plan area. The Stormwater Management Strategy seeks to provide a coordinated and centralised approach to stormwater management so that no a balance can be achieved between all site uses that maintained stormwater quality, and limits the impacts of flooding.
a) The identification of water management risks, including flood risk, water quality and stormwater impacts, the isolation of stormwater from contaminated land and the local groundwater table, and the consideration of climate change and coastal risk;	- Flood risk is discussed in Sections 2.5 and 4.2. - Water quality risks are discussed in Sections 4.3 and 4.4 - Stormwater impacts are discussed in Sections 4.3 and 4.4. - Aspects relating to the isolation of stormwater from the groundwater table and local ground water are discussed in Sections 4.3 and 5.2 (Table 1). - PONs Environmental Management System (EMS) Procedure No. 033 for Groundwater Monitoring at the Mayfield Site, and 034 Annual Review for the CSMP and attached at Appendix A and B respectively. This Strategy has been prepared to be consistent with those procedures. - Climate change and coastal risk is discussed in Sections 4.5 and 5.2.3.

DP&E Comment	Addressed in report
b) *design principles, objectives and environmental performance criteria for flooding, ground water and storm water management, including the consideration of the following matters:*	Refer to Section 5.1 – Principles and Objectives
i. *the design and adoption of stormwater management measures that reflect site constraints, land use and catchment conditions;*	Refer to Section 5.2 for the nominated detailed design criteria and commitments.
ii. *the minimisation of runoff and the reduction of peak flows;*	Refer to Section 3.2.2 and the requirement for above-ground rainwater collection systems in Section 5.2.
iii. *minimising coastal risks and flooding impacts for land uses within, adjoining and in proximity of the site, including the establishment of site design criteria for site levels and drainage capacity, and in consideration of NSW seal level rise planning benchmarks;*	Site specific design criteria are discussed in Section 5.2 (Table 2). Designing for sea level rise is discussed in Section 5.2.3.
iv. *integrating stormwater capture, treatment and reuse into the operating environment;*	Refer to Sections 5.1, 5.2 and 6.2.
v. *improving surface and groundwater quality within the site and at discharge points;*	Section 5.1 and Section 5.2
c) *conceptual site based flooding, storm water, surface water and water quality management measures, including standards for the protection and maintenance of these measures;*	Refer to Sections 5 and 6
d) *a monitoring program for surface and groundwater which identifies parameters to be monitored, sampling locations, monitoring methods and sampling methodology, including frequency and duration of monitoring and sampling, responsibilities and reporting;*	Refer to surface water monitoring program in Section 7
e) *corrective action and contingency measures in the event of exceedances of the relevant environmental performance criteria;*	Refer to Section 8.3
f) *process for regularly reviewing an updating the Strategy to identify continual improvement procedures and to reflect ongoing development of the site;*	Refer to Section 8.4
g) *reporting procedures and protocols for evaluating performance; and*	Refer to Section 8.4
h) *taking into account the NSW Coastal Planning Guidelines: Adapting to Sea Level Rise (DoP, 2010), the Preliminary Stormwater Strategy (contained in Appendix H of the Environmental Assessment), Managing Urban Stormwater: Soils and Construction (Landcom 2004), Council design*	Throughout the Strategy document.

DP&E Comment	Addressed in report
criteria and the existing Hunter Development Corporation groundwater monitoring program.	
The Strategy shall be prepared in consultation with Council, HDC, and EPA and shall be submitted to the Director-General prior to the lodgement or consideration of any project application associated with this Concept Plan approval, or as otherwise agreed by the Director-General. The Proponent shall update the Strategy, a required, following subsequent project approvals associated with this Concept Plan Approval.	A copy of this document is to be provided to the relevant agencies for comment with updates incorporated accordingly.

2.0 Site Description

2.1 Site Background

The site is located at Mayfield approximately 7 kilometres (km) north west of the Newcastle central business district. The site adjoins the South Arm of the Hunter River and has a total area of approximately 90 hectares. The site is owned by the Government Property NSW and managed by Port of Newcastle (PON).

The site was formerly occupied by the long-running BHP Steelworks operation which commenced in 1915 and closed in 1999. Following closure, works including the demolition of structures and remediation of the site soils and groundwater, were completed to minimise the transport of contaminants within groundwater to the river by provision of a 'barrier wall' and low permeability capping.

The Concept Plan Approval for the redevelopment of the site included a conceptual layout of anticipated port-related activities, with five key land-use precincts, as follows:

- **PON Operational Precinct:** for managing operations by PON within the Port of Newcastle. Will include various administrative buildings and small-scale facilities, including vehicle and marine equipment areas.
- **Bulk and General Precinct:** for handling and storing bulk cargoes, such as non-hazardous dry bulk products, and containing various buildings and infrastructure, including covered storage areas, storage silos, conveyors systems, and office buildings.
- **General Purpose Precinct:** for handling and storing cargo containers, heavy machinery, break-bulk and Roll-on Roll-off cargoes. Will include various buildings and infrastructure, including covered storage areas and areas of hardstand.
- **Container Terminal Precinct**: for the storage and transfer of containers, containing various buildings and infrastructure such as quayside and mobile cranes, rail mounted gantries, hardstand areas.
- **Bulk Liquid Precinct:** for the receipt, storage, blending and distribution of fuels and biofuels. To include buildings and structures such as tank farms with steel storage tanks, fuel distribution pipelines and administration buildings.

As described in Section 1.1, subsequent modification to the Concept Plan Approval removed the prescriptive precinct and cargo based limits on the development of the Concept Plan area and instead provided a whole of site cumulative approach. Parts of the site either have been developed, or are in the process of being developed, for a range of port related activities including:

- Existing general purpose cargo handling facility known as Mayfield Berth 4;
- Existing facility run by Koppers for the unloading of coal, tar and pitch products via BHP Berth 6; and
- Bulk liquids facility, run by Stolthaven, in the northern part of the site.

Following closure of the BHP Steelworks operation in 1999, development approval was issued in April 2001 (DA No.293-09-00) which allowed for remediation of soil and groundwater contamination and development of the site as a multi-purpose terminal including container terminal and general cargo handling facility. The general cargo handling facility at Mayfield Berth 4 has been developed and operates in accordance with this approval.

Remediation works on site and in adjacent areas of the South Arm of the Hunter River have now been completed. Remediation works are now managed in accordance with the site CSMP. Refer As part of these remediation works a subterranean barrier wall and sheet pile walls along the river edge were installed. In addition, most of the site was also sealed with asphalt and trunk drainage infrastructure was installed. Further description of the existing site stormwater management system is provided in Section 2.3.

2.1.1 Contaminated Site Management Plan

The former BHP Steelworks Site Contaminated Site Management Plan (CSMP) provides a common framework for the ongoing management of the remediated land which falls within the Mayfield Concept Plan Approval Area. The CSMP is designed to provide the guidance for the ongoing management of the contaminated land such that the integrity of the remediation works is maintained to prevent the release of, or environmental impacts occurring from, liberated contamination.

The CSMP includes requirement for the monitoring of groundwater to determine changes in contamination levels and hydrology. Where appropriate consideration of the CSMP is provides in this document noting that this document focuses on stormwater management.

PON groundwater management documents and procedures have also been prepared to be consistent to the CSMP, including PON EMS procedures 33 and 34 as references in this document and attached at **Appendix A** and **B** respectively.

2.2 Site Context

The project is located within the Hunter River Estuary, which is the second largest estuary in NSW, comprising of over 100 kilometres of waterways, including the South Arm of the Hunter River which flows to the south of Kooragang Island. Kooragang Island was originally a series of smaller islands which formed part of the Hunter River delta, and the area was reclaimed and raised to a level of approximately 3 m Australian Height Datum (AHD) using sand dredged from the Hunter River.

The estuary has been substantially modified as a result of demand for industrial land and the major changes of land use which have taken place upstream. In addition to port-related activities, a range of other commercial activities exist within the estuary, impacting on water quality and habitat integrity (Hunter Valley Research Foundation, 2008).

The site is located in an area of Newcastle that is dominated by industrial and port related land uses.

To the west of the site is vacant land under the control of Hunter Development Corporation (HDC), known as the Intertrade Industrial Park (IIP). Previously there was a proposal to develop this site for a mix of industrial and commercial land uses, however, the status of this proposed development is currently unclear.

To the north of the site is the South Arm of the Hunter River and across the river on Kooragang Island are a number of significant industrial facilities and coal loading facilities run by Port Waratah Coal Services (PWCS) and Newcastle Coal Infrastructure Group.

Although the site does not directly adjoin any residential properties, there are three main residential areas in reasonable proximity to the site:

- To the west beyond the IIP site and across Industrial Drive is the Mayfield residential area.
- To the south beyond the PWCS coal terminal facility is the Carrington residential area.
- To the east across the Hunter River and Walsh Point (the south eastern extent of Kooragang Island) is the Stockton residential area.

The closest residential area to the site is at Mayfield which is approximately 900 metres from the site boundary.

A locality plan showing the site and surrounding areas is provided in **Figure 1**.

Figure 1 Mayfield Precinct (source: Strategic Development Plan for the Port of Newcastle 2013 – 2043)

2.3 Existing Stormwater Management System

The detailed design of the existing stormwater infrastructure was based on a preliminary stormwater design (Patterson Britton 2006) for the ultimate redevelopment of the entire site. A stormwater trunk drainage network was established in association with the remediation carried out across the site. This drainage network includes two trunk drains (an eastern and a western drain) which receive run-off from the hard stand areas, open drains and pipes across the site before discharging via nominated points to the Hunter River. The location of the drains and post-remediation site contours are shown in **Figure 2**.

The trunk drains are intended to provide a permanent trunk drainage solution for the site. Additionally, a number of smaller, temporary, lined shallow ponds and drains have been provided across the remediation area. These ponds contain weirs to control water levels, and drain off-site via lined channels or existing underground drainage. The site has been partly contoured to direct stormwater runoff into the stormwater drains. These ponds and drains serve as an interim drainage system until the final use of the site is determined and a permanent drainage system is implemented.

The stormwater management system, in conjunction with the capping of the site, provide a barrier minimising groundwater and surface water interaction and have been designed to work together to reduce the amount of rainwater infiltrating the site and the movement of groundwater through contaminated soil and into the South Arm of the Hunter River. Following completion of the contamination works the impervious capping was placed across the site to direct runoff to the truck drainage network. Final levels generally range between 3.5m and 7m AHD as shown on **Figure 2**.

Trunk Drainage – Eastern and Western Drains

The Western Drain is located along the western boundary and extends from the southern end of the Closure Area, north to the Hunter River. The drain consists of 475 m of lined open channel draining into a 220 metre (m) long concrete precast box culvert (2.40 m width x 2.05 m height) to the Hunter River.

The Eastern Drain consists of 675 m lined open channel and 248 m of concrete precast box culvert (2.40 m width x 2.05 m height) beneath Selwyn Street to the Hunter River. A box culvert structure was also constructed at the Selwyn Street Inlet Structure which extends approximately 50 m southwest and connects to the upstream end of the open channel.

The open channels are lined with a 2 millimetre (mm) thick high-density polyethylene (HDPE) geomembrane liner, crushed concrete, soil and mangrove vegetation. At the major headwalls, at the upstream and downstream ends, as well as smaller headwalls along the drain, the liner has been connected (and sealed) to the headwalls using a product called Elock to provide an impermeable barrier between the open channel and the surrounding soil and groundwater. The joints between the pre-cast concrete box culverts were also treated to prevent ingress by dirt or water from surrounding soil or groundwater (Coffey Environments, 2008).

It is noted that disused stormwater drains in Area 1A and 2D were backfilled with sand imported to site (classified as inert waste) and left in-situ. Four new concrete stormwater pits were poured as complete units and installed in the low-lying area of Area 1A without joints. Coffey Environments (June 2008) concluded that, following the site remediation, the stormwater drains are isolated from the groundwater by suitable barriers.

The open sections of the main drains have grassed sloping edges which meet benches (2.5 m to 3 m wide) located in the intertidal zone. The benches of the Eastern drain are vegetation with mangroves to provide a water quality improvement function and visual amenity. Incorporated into each main drain is a weir at the downstream end to maintain a permanent water zone (RL 0.1 m AHD) at low tide. Permanent pools created by the weirs and deep water zones located within the channel provide stormwater attenuation and reduce flow velocities within the channels and promote settlement of sediments. Both drains (including the culvert sections) were designed for a storm event with a 1% Annual Exceedance Probability (AEP).

The main drains receive runoff from across the site via a series of open drains and trunk stormwater pipes. Runoff from the adjacent IIP site also flows into the Eastern and Western Drains. Stormwater from the main drains is discharged into the South Arm of the Hunter River at the north west and south west boundaries of the site. There is also a culvert that discharges stormwater from a low point in Area 1 to the South Arm of the Hunter River. This culvert was required to drain a low point in the remediated Area 1 landform. It is understood that this is a temporary arrangement, with future developers of any immediately adjoining wharfs or structures to construct an alternative drainage arrangement (i.e. altered site grading, or larger culvert or other) as required (Patterson Britton 2006).

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AECOM

EXISTING SITE DRAINAGE

Concept Stormwater Management Strategy
Mayfield Concept Plan

FIGURE 2

Eastern Basin

The Eastern Basin was constructed as part of the Stage1 remediation works for water quality treatment purposes. The basin was intended to act as a sediment basin prior to further development of the site, when it will serve a water quality treatment function (Patterson Britton 2006). This basin was designed to have a permanent water level equal to the permanent 'low-tide' level in the Eastern Drain (Selwyn Street).

One Steel Wet Basin

An existing basin is located on the southern side of Steel Works Drive.

Existing Developments

A bulk liquids development, operated by Stolthaven, has been constructed in the north-west corner of the site (completed in 2012). Construction for this development included the provision of an access road and associated stormwater infrastructure. The road connects from Steel Works Road and ends in a cul-de-sac head near the South Arm of the Hunter River.

Construction of this road includes the provision of conventional concrete kerb inlet pits and concrete pipes, collecting stormwater from the road way and limited areas of adjoining land. Stormwater captured and conveyed by this system is discharged via a gross pollutant trap (GPT) to the South Arm. Provision for transverse drainage was also provided in the form of 1.2 m x 1.2 m box culverts parallel to the rail line near Steel Works Road to allow trunk drainage to the Western Drain.

Mayfield No. 4 Berth is a two hectare berth and hardstand within the port-side lands that was constructed as part of the refurbishment of the former BHP Wharf 5. The site has a stand-alone stormwater management system and is subject to its own Environmental Protection Licence (EPL) and Operational Environmental Management Plan (OEMP).

2.4 Existing Surface Water Quality

The estuary of the Hunter River undergone significant environmental and physical changes associated with port and industrial development over the last 200 years. The South Arm of the Hunter River is highly disturbed as a result of historical and ongoing industrial activity in and around the Port of Newcastle. Heavy industry, manufacturing and shipping have contributed to poor water quality within the lower reaches of the Hunter River, including the South Arm.

Sampling and analysis of surface water across the site was undertaken by Coffey Environment (2008) during the remediation works (June 2007 and March 2008). As summarised in the EA (AECOM 2010), in general the following observations were made:

- Exceedances of Australian and New Zealand Environment Conservation Council (ANZECC) marine trigger values (95 percent level of protection) were common for heavy metals across all monitoring locations, particularly copper, lead and zinc. Chromium and cadmium exceedances were also observed. Elevated heavy metal concentrations were attributed in part to suspended particles in the water samples (which were not filtered prior to laboratory testing);
- Turbidity exceedances of the ANZECC guideline value (0.5 to 10 Nephelometric Turbidity Units (NTU)) were attributed to increased suspended sediments resulting from earthworks, including construction of the cap, and erosion of uncapped areas;
- In general, Total Petroleum Hydrocarbons (TPH) concentrations were below the intervention/investigation level of 325 micrograms per litre (µg/L). Elevated TPH concentrations in one sampling location were attributed to the high use of trucks, cars and other heavy equipment at that location; and
- Elevated concentrations of polycyclic aromatic hydrocarbons (PAH) were recorded. Higher concentrations in Area 1 were partly attributed to runoff from the bitumen seal used to coat the cap constructed in that area.

Sampling was also undertaken by GHD between November 2008 and October 2009. The results demonstrated:

- In general, turbidity exceedances were observed at all locations, with the highest and most frequent exceedances occurring in the south east of the site (in Area 2). These areas are currently uncapped and turbidity exceedances are likely the result of disturbance of sediments from earthworks and erosion of uncapped areas draining to the sampling locations;

- Heavy metal exceedances, particularly copper, lead and zinc occurred for all sampling events and in all locations, including the Eastern and Western Drains;
- TPH concentrations were generally below detection limits for all sites except SW9, located in the south east of the site, which recorded elevated levels of TPH since May 2009, with an exceedance of the guideline value on one sampling event (September 2009); and
- PAH concentrations were generally below limits of recording for all sites except SW9.

Existing ground and surface water quality is monitored in accordance with the requirements of the CSMP as per the procedures attached at **Appendix A** and **B**.

2.5 Flooding

The 'Newcastle City-wide Floodplain Risk Management Study and Plan' (BMT WBM, 2012) has been developed and adopted by The City of Newcastle to direct and coordinate the future management of flood prone lands within the Newcastle Local Government Area (LGA).

There are two flood events

- 1% Annual Exceedance Probability (AEP); and
- The Probable Maximum Flood (PMF)

These flood events could occur as a result of two flooding two scenarios

- An Ocean Flood, driven by ocean levels; and
- A River Flood, driven by flooding of the Hunter River

For the 1% AEP the site is not affected by flooding under either scenario. For the PMF the site is not affected under the River Flood scenario but is affected by the ocean flood scenario. In the ocean flood event the site is in an area described as Flood Fringe

Maps presented in the 'Newcastle City-Wide Floodplain Risk Management Study and Plan' (BMT WBM, 2012) indicates that site is defined as 'flood prone land' as it is subject to flooding during the Probable Maximum Flood (PMF) ocean flood event. However, the study and plan indicate that the site, with the exception of the immediate waterfront area (Hunter River bank), is not affected by Hunter River flooding (including up to the PMF Hunter River flood) or the 1% AEP ocean flood event.

During a PMF ocean flood event, the site is located in an area assessed as being "Flood Fringe", with a Life Hazard 'L1'. Life Hazard L1 is defined as "*flooding where there is sufficient time to remove people from the risk to their lives by means of formal community evacuation plans".*

A summary of key flood levels at the site is discussed in Section 4.2.

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3.0 Statutory Requirements and Guidelines

3.1 Concept Plan Approval

The Concept Plan Approval outlines the requirements for the preparation of this Stormwater Management Strategy (Condition 2.21).

Proponents for developments within each precinct will be required to prepare a development application and submission. The Concept Plan Approval requires that these applications be supported by a hydrological assessment in accordance with Condition 2.1(h) (see Section 1.3) and be prepared in accordance with this strategy and requirements of The City of Newcastle.

The following Sections 3.1.1 to 3.1.3 discuss the documents referenced by the Concept Plan Approval as requiring consideration by this Strategy and future developments of the site. Key relevant points from these policies are summarised below, however development proponents are required to review these policies to confirm any further applicable information to their developments.

3.1.1 NSW Coastal Planning Guidelines: Adapting to Sea Level Rise

The 'NSW Coastal Planning Guideline: Adapting to Sea Level Rise' (Department of Planning, 2010) was prepared to provide guidance on how sea level rise is to be considered in land use planning and development assessment in coastal NSW. It presents six coastal planning principles for sea level rise adaptation for application to decision making processes for land-use planning and development assessment. Of these Principal 5 and 6 are relevant to the development and use of the site:

Principal 5 *– Minimise the exposure of development to coastal risks.*

Principal 6 *– Implement appropriate management responses and adaptation strategies, with consideration for the environmental, social and economic impacts of each option.*

The guideline outlines the NSW sea level rise planning benchmarks as being an increase above 1990 mean sea levels of 40cm by 2050 and 90cm by 2100. These sea level rise benchmarks are intended to be used in coastal hazard and coastal flood studies and have been considered in the 'Newcastle City-wide Floodplain Risk Management Study and Plan' (BMT WBM, 2012) for the purposes of assessing flood risk and establishing Flood Planning Levels (refer to Section 4.2).

3.1.2 Floodplain Development Manual and Flood Risk Management Guide

The 'Floodplain Development Manual' (DIPNR, 2005) was prepared in accordance with the NSW Government's Flood Prone Land Policy to guide councils in the development and implementation of detailed local floodplain risk management plans to produce robust and effective risk management outcomes.

In accordance with the framework outline in this policy, The City of Newcastle has implemented a floodplain risk management process, culminating in the 'Newcastle Floodplain Risk Management Study and Plan' (BMT WBM, 2012). It is also noted that this study incorporates the NSW sea level rise benchmarks, consistent with the 'Flood Risk Management Guide' (DECCW, 2010).

3.2 Newcastle Development Control Plan 2012

The 'Newcastle Development Control Plan 2012' (DCP 2012) outlines the requirements of The City of Newcastle for the development and use of land within the LGA. The following sections provide the sections outline the relevant development provisions for the management of water in the future development of the site:

- Section 4.01 Flood Management
- Section 7.06 Stormwater Management
- Section 7.07 Water Efficiency.

These provisions outlined in the above are supported with further detail in the 'Stormwater and Water Efficiency for Development Technical Manual' (The City of Newcastle, 2013).

Whilst development applications to The City of Newcastle would not be required for future development (being a state significant site, DP&E is the consent authority), it is expected that future developments will need to demonstrate consistency with DCP 2012 where practicable. As such, it is likely that future applications for

development will require the assessment consistent with this Concept Stormwater Management Strategy, DCP 2012, and the 'Stormwater and Water Efficiency for Development Technical Manual' (The City of Newcastle, 2013). A summary of the key provisions potentially relevant to the future development of the Mayfield port-related land is provided below.

3.2.1 Flood Management

The site is considered to be flood prone under the definitions under the 'NSW Government Floodplain Development Manual' (Department of Infrastructure, Planning & Natural Resources, 2005), in that it is susceptible to inundation by the PMF ocean flood event. In this case, the site is susceptible to the PMF Ocean Flood event, but not the PMF Hunter River flood event, and is considered to be a flood fringe area.

DCP 2012 (4.01 Flood Management) notes that:-

> *Flood fringe areas can usually be developed without reference to how that development will affect the flood behaviour either upstream or downstream.*

With the exception of the waterfront bank of the Hunter River, the site is not inundated by the 1% AEP river or ocean events and therefore no hydraulic behaviour thresholds or property hazard categories have been applied to the majority of the site under the 'Floodplain Risk Management Study and Plan' (BMT WBM 2012). Whilst the site is defined as flood prone land, inundation of the broader site through either riverine or ocean flooding is likely to be very infrequent, of moderate depth, and low velocity, and therefore the associated potential hazard to life or property is considered low.

Where developments do not include works directly adjacent to the river, minimal controls under DCP 2012 apply, other than Clause 4.01.04 'Management of potential risk to life'. The objective of this clause is to:-

> *Only permit new development or redevelopment where the full potential risk to life from flooding can be managed for all floods up to and including the PMF.*

The immediate water frontage to the South Arm of the Hunter River is at greater risk of flood inundation and subject to higher velocity flood flows. Development of the waterfront or river bank would potentially affect flood flows in the Hunter River and be defined as works within the Floodway. The objective of DCP 2012 is to retain floodways in a condition capable for the conveyance of essential flood flow. Controls include:-

> *No building or structure erected and no land filled by way of the deposition of any material within any area identified as a floodway except for minor alterations to ground levels which do not significantly alter the fundamental flow patterns.*

Wharf structures along the waterfront may require hydraulic modelling and assessment, in accordance with DCP 2012, to demonstrate they do not adversely affect flows within the floodway.

3.2.2 Stormwater Management

Section 7.06 of DCP 2012 outlines Council's requirements for stormwater management for development. Council's aims include:

- *To adopt a whole of water cycle approach to development; and*
- *To ensure an appropriate quality and quantity of water enters waterways.*

Section 7.06 outlines a number of controls relating to the following:

- stormwater collection
- flooding and runoff regimes
- storage and storage drawdown
- site discharge controls
- pollutants
- overflow
- existing drainage systems.

The Concept Plan was developed to be generally consistent with DCP 2012 (formerly known as DCP50), with site-specific design criteria advised by The City of Newcastle adopted by Patterson Britton (2006).

The Preliminary Design and measures outlined in this Strategy are generally consistent with the provisions of DCP 2012, with the exception of site storage and site discharge controls. The intentions of the DCP for the capture of site runoff will be applied for roof catchments only (using above ground tanks) due to the capping of the site. Breaching of the capping for the installation of hardstand runoff poses potential issues relating to the integrity of the capping and reduced effectiveness in isolating and containing underlying pollutants.

Where the trunk drainage network can safely convey the 1% AEP event, without adversely affecting adjoining property, on-site detention is not proposed for the mitigation of peak flows, due to the proximity to the harbour (refer to Patterson Britton 2006).

The remainder of the stormwater network will be designed with regard to DCP 2012 and the 'Stormwater and Water Efficiency for Development – Technical Manual' (The City of Newcastle, 2012) and relevant industry guides where appropriate.

3.2.3 Water Efficiency

The objectives of DCP 2012 – Section 7.04 are to:

1) Improve the efficiency of water use and reduce the long term water consumption for residential, business and industrial uses through best practice water use;

2) Encourage the innovation of water efficient technologies and processes.; and

3) Incorporation of water sensitive urban design elements into the urban landscape.

As noted in the Preliminary Stormwater Strategy (Patterson Britton 2006) and EA (AECOM 2010), future development should seek to implement measures in line with the above objectives including:

- Capture of roof runoff in rainwater tanks, fitted with first flush devices, for reuse on site (i.e. washdown, landscape irrigation).
- Provision of water efficient plumbing fixtures and appliances where fitted.
- Reuse or recycling of water on site where practicable.

3.3 Contaminated Site Management Plan

The Concept Plan Approval envisages that development of the site will be staged across five precincts and individual proponents would prepare Project Applications to develop areas within each precinct.

The EA (AECOM, 2010) noted that the individual developments would be developed in accordance with the 'Contaminated Site Management Plan' (HDC, 2014) (CSMP). The CSMP provides the common framework for the design, implementation, use and maintenance works across the whole Closure Area. The CSMP provides controls to both the remediation works as well as future project works to ensure they are properly designed and implemented having regard to relevant risks presented by contamination of the site

The Eastern and Western Drains were constructed as part of the Stage 1 Remediation works. HDC has also constructed interim environmental drainage works in Area 2 to reduce infiltration and provide stormwater detention for sediment removal, to operate in the period prior to development.

Future development of the site will require regulatory approval for the design of permanent stormwater quality improvement devices to service the development, including provisions of DCP 2012 for individual lots, grassed swales and sand filters, stormwater detention basins and gross pollutant traps.

The CSMP requires that:

- Interim environmental drains and basins may not be decommissioned until written authority has been obtained from the EPA on the design of permanent water quality improvement facilities.
- The drainage system is to accommodate the drainage pathways identified in the Preliminary Design, or those superseded by the Final Design, and are to provide a similar pattern of drainage, and be compatible with the stormwater strategy for the site.
- Stormwater systems and sewer systems (including subsoil drains, pumping stations, sumps and other infrastructure or equipment) are to be isolated from ingress of groundwater.
- Designs should limit exposure to contamination during site regrading earthworks.

- Any plan of subdivision or lease is to create a drainage easement over the areas denoted Area K on the CSMP, and have suitable terms for access to maintain the drains which are acceptable to the State.

It is noted that a plan of subdivision has been registered for the site. The subdivision includes drainage easements which provides access rights to the relevant authorities for the inspection and maintenance of assets. I copy of the plan of subdivision is attached at **Appendix C**.

In order to manage the area to which the CSMP applies, PON has established EMS Procedure No. 034 a copy of which is attached at **Appendix B**. Any changes to the management of stormwater would be undertaken in accordance with the requirements of that procedure to protect the integrity of the remediation works.

4.0 Water Management Issues and Risks

This section has been prepared to satisfy Condition 2.21(a) of the Concept Plan Approval by providing an "identification of water management risks, including flood risk, water quality and stormwater impacts, the isolation of stormwater from contaminated land and the local groundwater table, and the consideration of climate change and coastal risk".

The following information is reproduced from the Environmental Assessment (AECOM 2010) based on the conceptual land use precincts.

Individual projects will be required to undertake a detailed hydrological assessment that identifies aspect of these water management issues and risks that are specifically relevant to their activities.

4.1 Issues Overview

The original environmental assessment (AECOM 2010) identified that stormwater run-off from the Concept Plan could potentially impact the receiving environment of the Hunter River in the following ways:

- Mobilisation of sediments from land based construction works;
- Run-off generated from extensive hard stand areas and buildings/structures;
- Spills and leaks of potentially contaminated materials and fuels; and
- Run-off generated from various road, rail and ship transport related activities.

The environmental assessment identified the following to have the greatest potential for adverse impacts to the water environment based on the proposed uses of the site:

- General land-based construction work (earthworks, excavations, road and rail infrastructure and stormwater drainage works;
- Mobilisation of existing soil contamination through percolation of surface water and groundwater flows;
- Drainage runoff generated from hardstand areas and buildings, and various road, rail and ship transport related activities;
- Discharge of contaminated stormwater during construction and operation; and
- Spill and leaks of potentially contaminated materials during construction and operation.

During operation, potential impacts on hydrology and water quality would occur from stormwater management from buildings and hardstand areas and transport and portside operations. A range of potential pollutants from the built development and operational activities from the precincts (e.g. heavy metals, sediments and other contaminants) could be generated and mobilised in surface runoff from the site.

For particular land use types (formerly referred to as 'precincts', the EA identified the activities and associated types and sources of pollutants that could be generated at each precinct based on the nature of its designated uses:

- **Administration areas and roads/carparks** – runoff from hardstand areas that receive vehicle traffic could contain elevated levels of pollutants such as heavy metals and PAH;
- **Bulk cargo handling and storage** – potential for spills from plant and machinery, ship loaders/unloaders and malfunction of conveyor systems and pipelines. Also potential contaminated runoff from uncovered stockpiles in wet weather or blown contaminants in windy conditions;
- **General purpose cargo handling and storage** – activities (e.g. heavy weight of cranes and machinery) could damage the subterranean barrier wall (part of which is located within this precinct) and result in groundwater or surface water infiltration into the highly contaminated sediments of Area1. Also the potential for uncontrolled spills and leaks resulting in degradation of water quality;
- **Container terminal** – potential risks to the barrier wall are similar to those for general purpose cargo areas. In addition, pollutants generated from the increased volumes of road and rail movements would potentially contaminate surface water runoff; and

- **Bulk liquid handling and storage**– potential for spills and leaks during transfer of liquids from ships to facilities, from damaged hoses and pipelines, corrosion and damage to tanks, and overfilling of storage tanks.

4.2 Flood Risk

The 'Newcastle City-wide Floodplain Risk Management Study and Plan' (BMT WBM, 2012) has been developed and adopted by The City of Newcastle to direct and coordinate the future management of flood prone lands within the Newcastle Local Government Area (LGA).

Maps presented by BMT WBM (2012) indicate that the site is only inundated during a PMF Ocean Flood event. The site, with the exception of the immediate bank of the Hunter River, is not affected by Hunter River flooding (including up to the PMF Hunter River flood) or the 1% AEP Ocean Flood event.

During a PMF Ocean Flood event, the majority of the site is located in an area assessed as being Flood Fringe, with a Life Hazard 'L1'. Life Hazard L1 is defined as "*flooding where there is sufficient time to remove people from the risk to their lives by means of formal community evacuation plans".*

A summary of key flood levels at the site include:

Frequent Ocean Flood level

The adopted frequent ocean flood level for Newcastle Harbour is 1.35m (refers to levels published in NSW Government 2010) and which was approximated as the current 10% AEP ocean water level. This value does not include an allowance for future sea level rise or coincident catchment flooding.

1% Annual Exceedance Probability (AEP) Ocean Flood level

The 1% AEP Ocean Flood level has been estimated at RL 2.3m AHD. This level has been calculated as the current peak recorded ocean level within Newcastle Harbour (RL 1.4m AHD) plus an allowance for sea level rise of 0.9m by year 2100. The average level of the Concept Plan area ranges between 3.5m and 7m.

Extreme (PMF) Ocean Flood level

An Extreme Ocean Flooding level of 3.4m AHD within Newcastle Harbour was estimated by numerical modelling by (DHI 2008, in BMT WBM 2012). This value includes a sea level rise of 0.9metres expected by 2100 and assumes coincidence of several extreme meteorological conditions (approximately equivalent to a PMF event). With site levels generally between 3.5m and 7m the majority of the site is safety from the PMF.

It is noted that the immediate waterfront (Hunter River bank) is at greater risk during a Hunter River or ocean flood event of inundation and high velocity flood flows due to its proximity to the South Arm of the Hunter River. Structures along the waterfront will therefore be subject to the provisions of DC P2012 (Section 4.01).

4.3 Construction Phase Risks

The capping and contouring of the site remediation works has been carried out to minimise surface ponding and direct runoff to either the Eastern or Western Drains. Construction works will alter the existing drainage regime of the site, with potential impacts to local drainage and water quality, such as:

- The alteration of surface gradients within the precincts during construction may result in areas of ponding and lead to infiltration and interaction with contaminated soil and groundwater.
- The potential for impacts arising from erosion and sedimentation from stockpiles, and exposed work areas within the construction site – mobilising fine soil particles and associated heavy metal and organic contaminants.
- Excavation for the installation of stormwater infrastructure and other services or structures has the potential to disturb and interact with contaminated soil material beneath the site capping layer or reduce the integrity of the capping.
- Spills and leaks from plant and machinery reaching site drains or the Hunter River if not prevented or controlled.
- Pollutants generated by construction vehicles and machinery and deposited on roads, or waste materials not appropriately stored could contribute to increased load of pollutants such as litter, hydrocarbons, heavy metals and particulates.

4.4 Operational Risks

The industrial use of the site and change in hydrological regime poses various risks to discharge water quality, with specific issues being dependent on individual developments. However the following generic water quality risks are possible.

4.4.1 General

The greatest potential for impacts on hydrology and water quality during operation of the proposed concept would be from stormwater management from buildings and hardstand areas, and transport and portside operation activities.

As part of the remediation works the site was sealed with an inert capping layer to prevent surface water infiltration. The capped surfaces across the site would be further covered by impervious hardstand. Surface water runoff from the impervious surface has the potential to mobilise sediments and contaminants (such as litter and hydrocarbons from oil and fuel spills and leaks) and organic matter which would degrade receiving water quality.

Road and rail infrastructure constructed to service the site could be the source of a range of potential pollutants in surface runoff from the site. Large volumes of trucks would use access roads and internal road networks to import and export bulk goods, liquids and general cargo. The potential pollutant loads in road runoff, including hydrocarbons, fuels, heavy metals and particulates, would increase and result in impacts on water quality in the stormwater drainage system and potentially the Hunter River. First flush stormwater containment would be designed into the SMS, to capture and separate the most contaminated portion of stormwater runoff.

Road and rail infrastructure has the potential to divide catchments and provide a barrier to surface water flow from one part of the site to another. This would in turn potentially increase flood risk within the site. Flood risk impacts would be addressed by ensuring that appropriately designed culverts are installed and maintained.

The construction of a new access road off Selwyn Street and the internal road network could form barriers across the local catchment area during operation, potentially altering flood risk within the site and to the adjacent site areas and IIP. Appropriately sized culverts would be designed and constructed under roads to convey flows across the site to main drains and retention basins.

Failure of part of the surface water management system, for example drain/pipe blockages, could result in uncontrolled discharge of contaminated surface water runoff within the site or to the South Arm of the Hunter River. Malfunction or poor maintenance of the surface water management system could also result in increased localised flooding, with the potential to impact on the site and on neighbouring land.

4.4.2 Barrier Wall Integrity

A subterranean barrier wall installed as part of the remediation activities to contain contaminated groundwater onsite. Construction activities have the potential to impact the integrity of the barrier wall, which could in turn result in groundwater or surface water infiltration into the highly contaminated sediments of Area 1. The likelihood of this impact occurring is low as there is a 15-metre easement in place around the barrier wall and the CSMP places restrictions on construction activities within the vicinity of the barrier wall. These measures would minimise the potential for the barrier wall to be damaged, in turn reducing the likelihood of infiltration and contamination.

The large weight of mobile cranes and heavy machinery moving across (or in the vicinity of) the barrier wall could result in damage to the barrier wall at the land surface. This could result in infiltration of surface water and a potential increase in the volume of water in contact with contaminated sediments and groundwater. The likelihood of this impact occurring is low as the barrier wall has been designed to withstand sustained heavy loads associated with port operations.

4.4.3 Bulk Cargo Handling and Storage

Activities relating to storage and handling of bulk cargo is likely to require facilities such as covered and uncovered storage areas, storage silos, conveyor systems. Bulk goods to be handled and stored include grain, dry-bulk cement, fertiliser, coke, soda ash, meals and sand. All goods would be stored in covered storage areas, except boutique coal and sand which would be stored uncovered.

During operation, there is the potential for spills from ship loaders/unloaders during transfer of bulk goods from ships to land and vice versa. Malfunction of conveyor systems and pipelines could result in uncontrolled spills and leaks and lead to degradation of stormwater quality. Fuel and oil leaks and spills from machinery and plant could also result in water quality impacts in this precinct.

There is the potential for contaminated runoff to be produced by uncovered sand and boutique coal stockpiles during rainfall. In addition, materials and particles blown from uncovered stockpiles during windy conditions, could result in deposition and contamination of waterways within and adjacent to the site. Measures such as bunding to capture runoff, as well as dust and sediment control measures would be implemented to reduce the potential for stockpiles being the source of contaminated runoff.

4.4.4 Containers and General Purpose Cargo

General purpose activities would include handling and storage of cargo containers, heavy machinery, break bulk and Ro/Ro cargo, for example, farm and road construction machinery and excavators would be imported while ammonia nitrate, scrap metal and pine logs would be exported. Cargo including large industrial components, luxury boats, transformers, machinery, and steel and timber products would be imported and exported.

Development for the import / export of a container terminal(s) or for general purpose cargo would include buildings, quayside infrastructure such as mobile cranes, hardstand areas, workshop, quarantine facilities and road and rail infrastructure.

During operation, there is the potential for spills during transfer of cargo and machinery from ships to land and vice versa. Malfunction of cranes and conveyors could result in uncontrolled spills and leaks and lead to degradation of stormwater quality. Fuel and oil leaks and spills from machinery and plant could also result in water quality impacts. Strict procedures for cargo transfer and regular maintenance of cranes, conveyors and machinery would be implemented to manage the potential for spills during operation.

4.4.5 Bulk Liquid Operations

Bulk liquid operations may include the receipt, storage, blending and distribution of fuels and biofuels. Fuel types handled would include unleaded petrol, diesel, biodiesel, fuel oil and ethanol. Unleaded petrol, diesel and fuel oil would be delivered to the site by ship and biodiesel would be delivered by road. Infrastructure would include tank farms with steel storage tanks, fuel distribution pipelines, loading / unloading facilities for trucks, bunded areas, workshops and administration buildings.

Ships at berth would transfer unleaded petrol, diesel and fuel oil through flexible hoses to an aboveground pipeline and into the bulk liquid facilities. There is the potential for spills and leaks to occur during transfer of the liquids from ships to facilities, from damaged hoses and pipelines. There is also the potential for overfilling of storage tanks during receival of fuels from both ships and road tankers which could result in large spills into the drainage system of the precinct or directly to the South Arm of the Hunter River. Large spills are unlikely to occur as there would be strict procedures set out in environmental management plans, incorporating visual inspections, supervision of transfers and regular maintenance of hoses and pipes.

Bulk fuel storage tanks would have the capacity to store significant volumes of fuel on the site. Damage to tanks, corrosion, malfunction of valves and level gauges and failure of bunding, although highly unlikely, could result serious leaks, spills and overflows of potentially large volumes of fuels and oils to the receiving environment. The resultant impacts of uncontrolled fuel spills on the Hunter River would be significant and potentially cause long-term damage to water quality, habitats and sediments within the river. Bunding would be placed around storage tanks to contain spills and overflows and emergency response plans would be implemented to ensure the risk and impact of spills and overflows is minimised.

Bunded areas would create micro-catchments within the precinct, potentially impacting flood risk potential. Stormwater drainage infrastructure would be designed to ensure bunded areas are incorporated into the stormwater system, thereby managing the potential for flood risk impacts within or downstream of the precinct.

4.4.6 Berth Operations

During operation, runoff from the hardstand areas of the berths could become contaminated with sediment and pollutants associated with machinery and vehicles and result in impacts on water quality if allowed to drain directly to the Hunter River. The first flush containment system that would form part of the SMS (refer to Section 9.6.4) would capture rainfall runoff containing accumulated pollutants, reducing their release to the South Arm of the Hunter River.

4.5 Coastal Risk & Climate Change

Given the site's proximity to the Hunter River, the area is potentially at risk of coastal hazards and increases in mean sea level predicted as a result of climate change.

The Coastal Risk Management Guide (DECCW, 2010) notes that:-

> *higher inundation levels, saltwater intrusion and landward advance of tidal limits within estuaries will have significant implications for freshwater and saltwater ecosystems and development margins, particularly buildings structures and foundation systems within close proximity to the shoreline.*

Increased sea levels will also affect the integrity and function of stormwater drainage and sewerage infrastructure as the rise in mean sea level increases the frequency and depth of seawater ingress into these systems.

Increasing sea levels and changing rainfall patterns may also change the vulnerability of areas to flood inundation as the effects of climate change take place. It is noted that the recent Newcastle City-wide Floodplain Risk Management Study and Plan (BMT WBM 2012), prepared flood risk maps for Newcastle that includes allowances for the NSW sea level rise planning benchmarks which is a 0.9m rise in sea levels by 2100.

As noted in Section 4.2, the site is not generally vulnerable to flooding, except in rare events, including allowances for climate change. However increased frequency and depth of tidal inundation has the potential to affect site infrastructure, and as such should be considered in the detailed design of site stormwater infrastructure, and the design of site services and structures.

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5.0 Concept Stormwater Design

5.1 Stormwater Management Principles and Objectives

Future development of the site is to include the design and construction of a permanent stormwater drainage system, generally consistent with The City of Newcastle guidelines, standards and requirements.

The EA (AECOM 2010) presented six overarching stormwater principles to guide stormwater, flooding, and water quality management across the site. Integrated water cycle management and water sensitive urban design approaches form the basis of these principles.

Principal 1: *Design and adopt stormwater management measures that are appropriate for the site constraints, land use, and catchment condition.*

Principle 2: *Minimise runoff and reduce peak flows.*

Principal 3: *Minimise flooding impacts within and downstream of the site.*

Principle 4: *Integrate stormwater capture, treatment, and reuse into the operating environment.*

Principle 5: *Maintain or improve surface and groundwater quality within the site.*

Principle 6: *Maintain or improve quality of surface and groundwater discharges to the South Arm of the Hunter River.*

The Preliminary Design Stormwater Strategy (Patterson Britton 2006) was prepared for the Stage 1 remediation works and was also submitted in support of the Environmental Assessment. The strategy outlines design objectives for the future design and management of stormwater on the site. Whilst some of these objectives overlap with the above principles or are more relevant as drainage standards, these are reiterated below:

Detailed drainage designs for the future development of the site will aim to meet the following objectives:

- *Stormwater system is to be coordinated across the site, whilst reflecting specific requirements of each precinct;*
- *Stormwater generated on-site to be conveyed to the South Arm of the Hunter River;*
- *Stormwater to be isolated from the local groundwater table;*
- *Major drains and detention basins are to have sufficient capacity to convey/retain the 1% AEP catchment runoff;*
- *Maintain water quality and provide aquatic habitats where possible;*
- *Promote recycling and reuse of drainage runoff where possible;*
- *Provide maintenance access where necessary;*
- *Provide an aesthetically pleasing drainage solution;*
- *Utilise existing infrastructure where possible; and*
- *Minimise construction costs and spatial requirements.*

Drainage networks for individual project may need to be designed and constructed progressively and would incorporate some or all of the Principles listed above, depending on the location of each project within the site, the size of the drainage sub-catchment, and existing drainage features in place at the time of the project development. Each individual development will be designed and developed such that no adverse impacts to future development is incurred by ensuring appropriate site grading and maintaining sufficient capacity in the site trunk drainage networks.

5.2 Detailed Design Commitments and Criteria

The detailed design of stormwater systems for individual projects is required to comply with this Concept Stormwater Management Strategy, The City of Newcastle design criteria, principles set out in the Contaminated Site Management Plan and in consultation with applicable regulatory agencies.

As documented by Patterson Britton (2006), it is intended that stormwater management and water quality improvement for general catchment runoff will be achieved using the following treatment train:

- above-ground rainwater collection systems (roof water only)
- water quality controls for the remainder of the lots (site-specific, depending on nature of activities)
- grassed swales for conveyance and as a treatment measure of road runoff
- discharge into the detention basins (e.g. East Basin and One-Steel Basin) to pass through GPTs
- detention basins to serve a dual quality improvement function (i.e. additional sedimentation)
- tidal-lined mangrove 'wetlands' (the open channels – eastern and western drain).

Site-specific design criteria or measures that are to be incorporated into the development of the site are listed in Table 2. These have been compiled based on commitments or mitigation measures presented in the EA and Preliminary Strategy. As such they form part of the Concept Plan Approval.

Table 2 Design and Construction of Stormwater Infrastructure

Feature	Requirements
Site grading	Site is to be graded to be free-draining and free of ponded areas Site grading to be designed to maintain separation of potentially contaminated runoff (i.e. from stockpiles, tank farms, washdown areas, etc.) from clean stormwater runoff.
General	- Open channels to be adopted as a 'green' solution. - All open drains are to be lined to isolate drainage flows from the local groundwater. - Where inverts are below the estimated groundwater table, will be sufficiently weighted to counter buoyancy forces. - Appropriately sized culverts and/or drains will be constructed under road and rail infrastructure to maintain connectivity between catchments and reduce the likelihood of localised flooding.
Roads	- Water sensitive urban design features (e.g. vegetated swales) or similar treatment will be provided to remove potential contaminants prior to discharge to the Hunter River (e.g. sediments, contaminants deposited on roadways).
Minor open drains and swales	- Designed to convey the 5% AEP event. - Use of swales for treating stormwater is acceptable. - Grassed batters – no minimum slope (maintained by boom-style mowers) and may undulate if required. Low flow drainage will be provided to drain flat sections. - Acceptable to run overflows along swales as well as roads and footways during larger events (i.e. safe overland major flow paths). - Velocity x Depth product to be less than 1.0 (in a 1% AEP event) (or as otherwise recommended in updated revisions of Australian Rainfall and Runoff).
Major open drains	- Designed to convey the 1% AEP event. - 0% longitudinal grade is permitted (where intent is to create a water quality function or intertidal zone, similar to the Eastern or Western Drains).
Tidal drains	- Use of mangroves is preferable for vegetation treatment (use Manning's n of 0.1 for mangroves). - Flap valves to prevent tidal inundation of the stormwater system

Feature	Requirements
	should be located at the upstream end of open channels.
Tailwater conditions	- A tailwater of 0.8m AHD (spring high tide) for the 1% AEP flood event (across the site) is considered appropriate, and this should be compared to a flood event based on a storm surge tailwater (1.35m AHD) with a 10% AEP rainfall event.
Stormwater pipes	- Minimum pipe slopes of 0.3% are to be adopted. - Consideration to be given to pipe blockage, including risk of blockage, design features to minimise risk of blockage and storage effects (with referenced made to updated revisions of Australian Rainfall and Runoff). - Pits, pipes, culverts and headwalls shall be constructed so that drainage flows are isolated from groundwater. Therefore conduits are to be sealed and open drains lined with HDPE.
Roof water	- Roof water will be captured and stored on site and reused for wash down facilities, irrigation of landscaping, or other non-potable reuse purposes where practicable.
Basins	- To perform either a water quality or flood attenuation function. - To be connected to the main drains. - Designed with sufficient capacity to contain up to the 1% AEP event. - Wet basins to have side slopes of no steeper than 1V:3H, lined with HDPE to prevent groundwater interaction.
Bunds	- Catchments with a high risk of accumulation of contaminants, or spills and leaks are to be bunded to contain potentially contaminated stormwater, and separated from clean stormwater runoff in adjacent sub-catchments. - Stormwater captured in bunded areas will be retained on site until tested as suitable for discharge. - Bulk liquid storage tanks to be located in sealed bunded area, with capacity to hold 120% of the tank storage volume. Tank farm areas to be encompassed by a second bund in the unlikely event of an individual bund failure.
Interaction with groundwater	- Design and construction of all drains must consider the potential to interact with the groundwater table and implement measures to reduce infiltration and prevent leaching of groundwater into the stormwater system.
Construction materials	- If slag is used in the construction of major stormwater channels, testing is to be undertaken to demonstrate no leachate into the water.
All excavation works	- All works are to be carried out in accordance with the CSMP. - Use of geotextile liners or temporary capping would reduce infiltration of surface water runoff where capping is disturbed during construction (to be reinstated and maintained during operation). - Designs and all disturbance works are to maintain the integrity of the site capping (as per the CSMP).
Bulk liquids storage tanks	- Each tank to be fitted with auto-level gauging, high/high and high/low level alarms, multi-level temperature measurement, multi-level sampling equipment, water draining and low-level product drains for maintenance. - Filling of storage tanks to be controlled by a computer-controlled system that would monitor storage tank levels and reduce the risk of overfilling. - Design of tanks to meet or exceed the applicable standards. Storage tanks to be placed on a reinforced concrete foundation and include a tell-tale drain installed under each tank to assist with leak detection.

5.2.1 Water Quality Improvement

The EA and Preliminary Design Stormwater Strategy both discuss the use of first flush systems as a water quality treatment measure for site catchments. The intent of these systems would be to capture and treat runoff from hardstand areas, which can accumulate deposited sediments and pollutants from daily activities. The general principles for the first flush systems being:

> *First flush collection systems, consisting of pits, trenches or retention tanks, would capture the initial pollutant-laden stormwater flows created by the first 10 millimetres of rainfall. Oil/grit separators would be installed to separate oils, greases and other hydrocarbons from the first flush stormwater. The stormwater would then be transferred to holding tanks for testing, prior to discharge to main drains or storage tanks for reuse on-site.*
>
> *Sediment and pollutants removed from first flush stormwater (i.e., at the bottom of settling tanks and retention pits and from separators) would be discharged to the sewerage system or transported off-site for disposal at an approved waste facility.*

Individual developments will be required to demonstrate that adequate water quality treatment is being provided as part of the site operations. The design of these systems will be specifically tailored to suit the site configuration and anticipated pollutant load and hydraulic analysis provided with the Project Application to demonstrate that the proposed treatment train can meet the desired environmental performance criteria (refer to Section 7.2).

5.2.2 Flooding

Project applications for individual developments will provide a detailed description of waterfront structures and construction and operation methodology which will allow a detailed and robust assessment of potential environmental impacts at the land and water interface (AECOM, December 2010).

5.2.3 Designing for Sea Level Rise

The predicted flood levels for extreme events currently developed for The City of Newcastle (BMT WBM 2012) have considered the NSW seal level rise planning benchmarks i.e. 0.9m by 2100.

Whilst the site will be generally flood free in most events (with the exception of the PMF ocean flood event and the bank of the Hunter River), flood levels in the South Arm of the Hunter River should be considered when establishing floor levels for development (to ensure adequate freeboard), and in particularly in the design of infrastructure, services, and utilities to ensure they can maintain their function and achieve their intended design performance in the event that predicted sea level rises are realised.

With respect to stormwater infrastructure, designs should demonstrate that they will continue to provide their intended function, or can be readily adapted, as tailwater conditions increase over time. This may include providing adaptations to outlets, such as valves or tide flaps, adjustable weir heights and so on to allow for increasing tailwater levels and increasing frequency of inundation over the life of the development.

5.3 Coordination of Development

As the development of the site progresses, there will be a need to review the performance of the site stormwater system as a whole to confirm that each development fits within the overall stormwater strategy and does not adversely limit the ability of future sites to be developed.

Each individual Project Application will be required to develop a detailed Hydraulic Assessment demonstrating that:

- The proposed individual site configuration and activities conform with the requirements of the Concept Plan Approval, Council requirements and this Concept Stormwater Strategy;
- Demonstrating that the Mayfield port-related lands as a whole, will still perform as approved with respect to stormwater runoff and water quality; and
- That remaining lands yet to be developed are not adversely affected and can be developed within the approved limits of the Concept Plan Approval.

6.0 Construction and Operational Stormwater Management Framework

6.1 Construction Environmental Management

Construction works would be undertaken in accordance with Construction Environmental Management Plans (CEMPs), the CSMP and appropriate environmental controls and work method statements would be prepared for construction activities carried out across the site.

Water quality impacts during construction would be managed according to the CEMPs that would be prepared for each Project application. The CEMPs would set out appropriate controls to manage and mitigate potential impacts on water quality and would outline appropriate response procedures for dealing with emergencies such as spills and leaks during construction activities. These controls would be detailed in a series of sub-plans including:

- Soil and Water Management Plan (SWMP); and
- Emergency Response Plan.

The CEMP is to be prepared in accordance with the industry guideline 'Managing Urban Stormwater: soils and construction, Volume 1.' (Landcom, 2004).

The EA made some specific recommendation measures that would be implemented to mitigate the anticipated risks to runoff and water quality during construction. These are summarised in Table 2 and should be incorporated into the CEMP.

Table 3 Construction Environmental Mitigation Measures

Feature	Criteria
Construction	
General	- Construction works to be undertaken in accordance with a CEMP.
Interim drains	- Existing temporary drainage network would continue to be utilised during construction works. Prior to decommissioning interim environmental drains, regulatory approval for the permanent stormwater management system is required.
Erosion and sediment controls	- To be documented in a Soil and Water Management Plan.
Barrier Wall	- The integrity of the barrier wall will be maintained through the application of development restrictions set in the CSMP.
Plant and machinery	- To be operated in a responsible manner by experienced drivers to reduce the risk of spills. Equipment to be well maintained.
Spills and leaks	- Spill kits to be appropriately located on site to ensure emergency containment measures can be implemented if required to prevent impacts to surface or groundwater quality.

6.2 Operational Environmental Management

Individual projects will develop and implement Project-specific Operational Environmental Management Plans, OEMPs) outlining the relevant monitoring, maintenance, mitigation and emergency response procedures for the site activities.

These measures will be documented in a series of sub-plans, including:

- Soil and Water Management Plan;
- Spill Management Plan; and
- Emergency Response Plan.

The OEMP and sub-plans will include details on the following:

- Implementation / maintenance of the stormwater management system infrastructure;
- Document controls for the management of bulk material stockpiles and materials within handling areas, through the use of containment walls, bunding, stormwater and dust controls;
- Measures to minimise excess materials being deposited off site during loading and transportation of bulk materials from the material handling area. Controls such as vehicle brush shaker pads, use of vacuum road sweepers, covering loads during transport and dust suppression to reduce impacts on water quality; and
- Emergency spill response procedures.

Site-specific measures will be required to be developed to suit the final arrangement and activities on each site to ensure compliance with the environmental performance criteria and statutory conditions, however generic and precinct-specific measures were provided in the EA.

General Stormwater Infrastructure

- Maintenance requirements for culverts and stormwater systems, including regular inspections for damage and blockages; and
- Inspection, maintenance and cleaning regimes for site water quality treatment devices (i.e. first flush devices, GPTs, rainwater tanks).

Bulk Materials Handling and Stockpiles

- Sites are to include controls systems for the management of bulk materials stockpiles and materials handling areas, for example: containment walls, bunding, stormwater controls and dust suppression;
- Measures will be provided to minimise risk of materials being deposited off-site during loading and transportation of bulk materials, for example: vehicle brush shaker pads, use of vacuum road sweepers, covering loads during transport, and dust suppression;
- Stockpiles will be managed to minimise airborne particulates (i.e. wetting down – dust suppression systems); and
- Stockpile sizes and configurations will be managed to stay within the original footprint to avoid spills into adjoining catchments or drains.

Shipping Vessels and Loading/Unloading Systems

- Site protocols will be developed that require operational vessels to have a Ship Board Oil Pollution Emergency Plan in place and maintain on-board spill kits;
- Disposal of solids and liquids from vessels to be in accordance with the International Convention for the Prevention of Pollution from Ships (MARPOL);
- Ballast water to be managed in accordance with requirements outlined in the *National Ballast Water Management Requirements* (Department of Agriculture, 2011);
- Operation of ships/unloaders to be carried out by experienced personnel;
- Ship loaders/unloaders: computer-aided systems, alarms and warning systems to be used to reduce the risk of spills and cargo as a result of transfer machinery failure, pipeline damage, or conveyor malfunction; and

- Regular inspection and maintenance of pipelines, machinery and plant to be undertaken to reduce potential for spills and leaks.

Spills and Emergency Responses

- Site-wide emergency spill response procedures will be developed and documented in the OEMP; and
- Appropriate training and resources will be provided to ensure adequate implementation if required.

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7.0 Water Quality Monitoring Program

7.1 Overview

The requirements of the water quality monitoring program are outline in the Concept Plan Approval, namely

d) a monitoring program for surface and groundwater which identifies parameters to be monitored, sampling locations, monitoring methods and sampling methodology, including frequency and duration of monitoring and sampling, responsibilities and reporting.

It is noted that the ongoing monitoring of groundwater is carried out by PON in accordance with the requirements of the Maintenance of Remediation Notice (under S28 of the *Contaminated Land Management Act 1997*), and has not been addressed by this strategy.

It is the responsibility of individual developments to implement appropriate measures for the protection of water quality and to undertake water quality monitoring demonstrating their sites are operating within the limits of their development consent and Environmental Protection Licence. Each of these programs will need to be tailored to suit the activity and site stormwater layout and will be documented in the site environmental management systems, such as within the Operational Environmental Management Plan (OEMP).

The following sections outline the framework for the development of the water quality monitoring programs for each site.

7.2 Environmental Performance Criteria

Unless otherwise approved under an EPL, discharge from individual sites are to be within the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000) marine trigger values for highly disturbed systems, with the values for 95% species protection in a marine ecosystem used to assess the contaminant levels.

Where the above trigger values are exceeded, contingency actions nominated in Section 7.6 will be initiated.

7.3 Site-Wide Monitoring Program

PON will conduct an ongoing monitoring program of the site drainage network to confirm the site continues to meet the commitments and requirements of the Concept Plan Approval. This includes ongoing monitoring required by the EPA to monitor contaminated land groundwater movement.

Sampling will be undertaken quarterly at the downstream extent of site drainage infrastructure prior to discharge to the Eastern and Western Drains (i.e. at pipe outlet into the drain, or within final stormwater pit prior to discharge, subject to access and safety considerations). This program only applies to stormwater infrastructure within the control of PON (i.e. road drainage and minor culverts). Sampling would be undertaken by the relevant PON Environmental Office or delegate.

Monitoring of the Eastern and Western Drain was considered and it is noted that these drains serve the Mayfield port-related lands, as well as adjoining sites, including the IIP. Works on these adjoining sites, including remediation works by HDC on IIP has the potential to adversely affect water quality in the Eastern and Western Drain. Such external quality effects are outside the control of PON and would be subject to their own water quality monitoring and controls.

Analytes for water quality monitoring are provided in Table 4. This monitoring is independent to any such programs that may be required by individual developments – which would be specified under existing and future EPLs for activities the limits of the Mayfield port-related lands.

Table 4 Analytes for Stormwater

Pollutant	Unit of Measure	Frequency	Sampling Method
Total suspended solids	mg/L	Quarterly	Grab sample during rainfall event
pH	pH units	Quarterly	Grab sample during rainfall event
Nitrogen (total)	ug/L	Quarterly	Grab sample during rainfall event
Oil and grease	mg/L	Quarterly	Grab sample during rainfall event
Phosphate	ug/L	Quarterly	Grab sample during rainfall event
BOD	mg/L	Quarterly	Grab sample during rainfall event
Dissolved oxygen	mg/L	Quarterly	Grab sample during rainfall event
Heavy metals (comprehensive suite)	ug/L	Annually	Grab sample during rainfall event

In addition to the water sampling program, routine quarterly inspections shall by undertaken by PON's property inspector of all open trunk drainage networks, open swales and road kerb inlets. The purpose of these inspections will be to ensure that the stormwater drainage network is free of blockages and well-maintained.

7.4 Construction Activities

A water quality monitoring program is to be developed by individual site developments and implemented by the proponent (or delegated to the Contractor) throughout construction. This program is to be documented in the CEMP and approved prior to commencement of construction. The objective of these programs will be to ensure that the water quality objectives in the Hunter River are not compromised.

The water quality monitoring program will be developed to suit the proposed construction activities and timeframes, and shall include the same program elements listed in Section 7.3.

- Establish existing baseline conditions.
- Identify monitoring parameters – to include parameters (environmental performance criteria) identified in Section 7.1.
- Identify representative sampling locations and frequency of sampling - as a minimum; sampling locations are to include the site discharge points (e.g. in-pit samples) and the downstream points of the Eastern and Western Drains during an ebb tide, or during stormwater discharge. Samples are not to be taken at the downstream points of the Drains on an incoming tide.
- Depending on the location of the construction activities upstream sampling points may also be required to obtain baseline or comparative data to monitor for potential impacts.
- Identify testing procedures - ensuring analysis is undertaken by a NATA registered laboratory.
- Provide a reporting framework that is consistent with this Strategy or as otherwise approved by regulatory bodies.

Discharge water quality is to be consistent with the Environmental Performance Criteria nominated in Section 7.2.

7.5 Project Requirements

Individual projects will be required to undertake site-specific water quality monitoring as specified under a development consent or Environmental Protection Licence (if applicable).

Proponents are not to discharge waters off-site without demonstrating the water meets the relevant conditions of an EPL or environmental performance criteria outlined in Section 6.1.

The proponent is to detail within the OEMP the water quality monitoring program, inclusive:

- Monitoring methodology and frequency;
- Monitoring locations;
- Sampling and analysis methods;
- Project-specific performance criteria;
- Contingency and emergency response plans;
- Procedure for reporting results; and
- Reporting procedures.

As a minimum, the monitoring programs are to include:

- Design of the sampling program to be in accordance with :
    - AS/NZS 5667.1-1998 Water quality sampling: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples, and
    - AS/NZS 5667.10-1998 Water quality sampling: Guidance on sampling waste waters.
- Sampling locations to be individually determined to suit the development, and as specified by an EPL, but will as a minimum include all off-site discharge points for the site;
- Sampling will be undertaken at least monthly (during discharge);
- Analysis of all samples is to be undertaken by a National Associate of Testing Authorities (NATA) accredited laboratory; and
- Routine recording and reporting of results shall be provided to PON on a monthly basis, with a consolidated summary document provided to PON annually.

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8.0 Implementation

8.1 Coordination of Development

As the development of the site progresses, there will be a need to review the performance of the site stormwater system as a whole to confirm that each development fits within the overall stormwater strategy and does not adversely limit the ability of future sites to be developed.

Each individual Project Application will be required to develop a detailed Hydraulic Assessment demonstrating that:

- The proposed individual site configuration and activities conform with the requirements of the Concept Plan Approval, Council requirements and this Concept Stormwater Strategy;
- The Mayfield port-related lands as a whole, will still perform as approved with respect to stormwater runoff and water quality; and
- Remaining lands yet to be developed are not adversely affected and can be developed within the approved limits of the Concept Plan Approval.

8.2 Monitoring and Maintenance

Individual operators will be responsible for inspecting and monitoring the performance of the site stormwater management systems and maintaining the infrastructure to ensure it continues to perform as designed. Regular and timely maintenance of drainage infrastructure will be the responsibility of individual operators.

Responsibility of maintaining road drainage and trunk infrastructure will remain the responsibility of PON.

8.3 Contingency Response

8.3.1 Port of Newcastle

In the event that PON receive an exceedance in the water quality sampling program, the following actions and contingency measures will be undertaken.

- For pollution events – initiate spill and emergency response actions as soon as possible and notify the Environmental Protection Agency (EPA) within the required statutory timeframes;
- Conduct site investigation and additional stormwater sampling (if possible) to identify the offending source;
- For exceedance of trigger values notify DP&E of the results and the initial plan of action within 24hours;
- Limit or stop activities contributing to the exceedance to reduce levels satisfactorily; and
- Develop and implement solutions, as appropriate, and in consultation with EPA and The City of Newcastle.

8.3.2 Individual Projects

The OEMP is to also detail actions and contingency measures in the event that an exceedance of the performance criteria occurs. The contingency plan will include the following generic measures, as a minimum, and will document any relevant site-specific procedures as appropriate to ensure the exceedance is contained and addressed as soon as practicable:

- Reporting obligations and responsibilities under the EPL, consent conditions and *Protection of the Environment Operations Act 1997*;
- Reporting to PON within 24 hours;
- Restrict further off-site stormwater flows, if practicable, from entering the surrounding environment until such time as the offending source has been identified and remediated;
- Investigation to identify the source and potential mitigation measures; and
- Develop and implement solutions, as appropriate, (in consultation with regulatory agencies as required).

8.4 Reporting and Review

8.4.1 Port of Newcastle

PON will provide the detailed results from the water quality monitoring program and stormwater management performance in accordance the Compliance Tracking Program (to be developed as per condition 4.1(c) of the Concept Plan Approval).

8.4.2 Individual Projects

Individual operations will be responsible for reporting environmental performance to regulatory agencies in line with the specific requirements of their Project Approvals and EPLs. Copies of all reports and water quality monitoring results are also to be provided to PON.

All site environmental management plans, including the CEMP, OEMP and associated sub-plans, will include mechanisms for reporting environmental performance, contingency response, and regular reviews to ensure continual improvement of site management processes and to reflect ongoing development of the site.

9.0 References

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Appendix A

Port of Newcastle EMS 033 Groundwater Monitoring Procedure

Appendix A Port of Newcastle EMS 033 Groundwater Monitoring Procedure

1.0 PURPOSE

The purpose of this procedure is to detail requirements for monitoring groundwater at the Mayfield site and reporting the results.

2.0 SCOPE

This procedure applies to the annual monitoring of groundwater at the Mayfield site. Section 4 i) of the EPA Section 28 Notice states that the annual groundwater monitoring at the site must be undertaken in accordance with the report titles *Ongoing Monitoring Requirements Former Steelworks Mayfield NSW* prepared by JBS&G dated 7 March 2014.

This procedure summarises the requirements of the JBS&G Report.

3.0 DEFINITIONS

Aquifer – any geological formation containing or conducting ground water, especially one that supplies the water for wells, springs etc.

Groundwater – the water beneath the surface of the ground, consisting largely of surface water that has seeped down: the source of water in springs and wells

Preservative – A solution used in water sampling programs to preserve environmental water samples for analysis.

4.0 REFERENCES

JBS&G *Ongoing Monitoring Requirements Former Steelworks Mayfield NSW*

EPA Remediation Site Declaration (Declaration no. 21022)

EPA Voluntary Remediation Agreement (VRA no. 26025)

EPA Notice to End Significantly Contaminated Land Declaration (Declaration no. 20144405)

EPA Notice of Maintenance of Remediation (Notice no. 20142802) under Section 28 of the *Contaminated Land Management Act 1997* (CLM Act)

HDC *Contaminated Site Management Plan, Closure Area Former BHP Steelworks Mayfield Newcastle* (CSMP)

NSW Contaminated Land Management Act 1997

Department of Environment and Conservation *Guidelines for the Assessment and Management of Groundwater Contamination* 2007

AS/NZS 5667.11: 1998 *Water Quality* **–** *Sampling* **– *Part 11 Guidance on sampling of groundwaters***

5.0 THE SITE

The site is known as the Mayfield Portside Lands Site. The site contains the following lots:

- Lots 1, 2, 39 & 40 DP 1177466
- Lots 36, 37 & 38 DP 1191723
- Lots 41, 42, 43, 44 & 45 DP 1191982

Some of these were created since the site was declared significantly contaminated. The original EPA declaration related to the same site, but with the following lots listed:

- Lots 1 & 2 DP 1177466
- Part Lot 35 DP 1191723
- Lots 36, 37 and 38 DP 1191723

6.0 BACKGROUND

The Site was declared as a Remediation Site (declaration no. 21022) by the EPA. Remediation at the Site was completed by the Hunter Development Corporation (HDC) in 2012 under a Voluntary Remediation Agreement (no. 26025). The remediation was certified complete by the appointed environmental auditor (ENVIRON Australia Pty Ltd) in December 2013.

The EPA accepted the findings of the ENVIRON Site Audit Report and determined that the contamination at the site is no longer significant enough to warrant regulation. The EPA issued a notice to end the significantly contaminated land declaration under notice no. 20144405. The EPA's declaration that the site no longer poses a risk to human health and the environment is on the basis that the *Contaminated Site Management Plan, Closure Area Former BHP Steelworks Mayfield Newcastle* (CSMP) prepared by HDC is implemented.

The EPA has issued a Maintenance of Remediation Notice (notice no. 20142802) under Section 28 of the CLM Act. The Maintenance Notice details the ongoing environmental management measures, including monitoring, required under the CSMP to confirm that the remediation is performing effectively, and that no defects are evident.

This Procedure details the requirements contained within the Maintenance of Remediation Notice and CSMP related to monitoring groundwater at the Mayfield site.

7.0 PROCEDURE

Groundwater monitoring is required in both the fill and estuarine aquifers. This is due to the influence of variations on water levels in the estuarine aquifer caused by the Hunter River. As tidal influences affect water levels, monitoring is required at higher frequency using data loggers.

The data loggers measure depth to groundwater. The chemical composition or temperature of the groundwater are not recorded. The following table demonstrates the data required from the field loggers:

Bore ID	Time sampled	Depth to aquifer (m)	Monument height (m)	Depth from aquifer surface (m)	Logger download file name	Battery %	Temperature calibration check
Comments:							

Groundwater monitoring is to be undertaken at the following monitoring well locations (refer to the figure contained in Appendix A):

- Hourly water level monitoring at fill aquifer monitoring wells MWG05FA, M13/12F, M14/21F; and
- Hourly water level monitoring at estuarine aquifer monitoring wells MWF05SA, M13/12S and M14/21S.

The data is to be compared to historic measurements to assess the ongoing performance of the cap and barrier wall.

If monitoring at the nominated sites is not possible due to site development, changes in site operations or other reasons, the replacement wells will need to be installed in similarly indicative locations. Replacement wells should be installed and levels monitored concurrently with existing wells for a minimum of

three months to allow a relationship between existing and replacement wells to be developed.

Data is to be collected twice yearly.

6.0 REVIEW

A review of this procedure will be conducted in accordance with the internal audit schedule or more regularly as required.

Appendix B

Port of Newcastle EMS 034 Mayfield CSMP Annual Review

Appendix B Port of Newcastle EMS 034 Mayfield CSMP Annual Review

1.0 PURPOSE

The purpose of the annual review is to verify compliance with the Mayfield Contaminated Site Management Plan (CSMP). The review is to confirm that remediation measures at the Mayfield site are being adequately maintained.

2.0 SCOPE

The key requirements of the CSMP that are to be reviewed are:

- Maintenance of low permeability capping
- Maintenance of drainage
- Prevention of any activities that could damage the barrier wall
- Documentation of measures taken to prevent damage to the barrier wall
- Documentation to confirm that developments on the site have accounted for specific issues noted in the CSMP, specifically:
    - areas of containment cells
    - volatiles
    - friable asbestos
    - unremediated areas
- For any proposed works that may disturb the cap, demonstration that a Work Management Plan (WMP) has been prepared and implemented. The WMP needs to demonstrate how the CSMP will be complied with.

Information to be collected is to include:

- Has the area been operating since the last annual review?
- Have any modifications occurred?
- Has any development occurred in the area since the last annual review?
- Does the area remain undeveloped?
- Has a specific Work Management Plan (WMP) been prepared?
- Are additional WMPs required for a particular area?
- Are there any obvious breaches of the CSMP?

3.0 THE SITE

The site is known as the Mayfield Portside Lands Site, located on Industrial Drive Mayfield. The site contains the following lots:

- Lots 1, 2, 39 & 40 DP 1177466
- Lots 36, 37 & 38 DP 1191723
- Lots 41, 42, 43, 44 & 45 DP 1191982

Some of these lots were created since the original declaration of contamination, and the subsequent issue of the Section 28 Notice. The original EPA declaration related to the same site, but with the following lots listed:

- Lots 1 & 2 DP 1177466
- Part Lot 35 and lots 36, 37 and 38 DP 1191723

Site Areas

For ease of description and for managing the annual review, the site can be divided into the following areas:

- Undeveloped or unused areas that have been remediated
- Unremediated areas
- Operational areas subject to specific EMPs prepared under the CSMP
  - Berth 4
  - Stolthaven Stage 1
- Developed areas that do not have a specific EMP:
  - Access Road
  - Railway
- Areas in the process of development or modification, subject to Work Management Plans

4.0 DEFINITIONS

Contaminated Site Management Plan (CSMP):

Means the "*Contaminated Site Management Plan, Closure Area, Former BHP Steelworks, Mayfield Newcastle*" prepared by Hunter Development Corporation February 2014 (ref: 203188053).

Contamination:

Means *"the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment"* as defined by the NSW *Contaminated Land Management Act* 1997.

Site Auditor

The State has appointed Mr Graham Nyland of Environ as the Site Auditor. The Site Auditor issues Site Audit Statements in accordance with Site Auditor Guidelines under the CLM Act 1997.

5.0 REFERENCES

- EPA Declaration of a Contaminated Site – Declaration no. 21022
- Voluntary Remediation Agreement no. 26025
- EPA Completion Notice no. 201444044
- Notice to end significant contamination declaration no. 20144405
- Contaminated Site Management Plan (CSMP) (Objective ID A529055)

6.0 BACKGROUND

The CSMP covers the land that was subject to the declared remediation site by the EPA under Declaration no.21022. The land was subject of a Voluntary Remediation Agreement (VRA no. 26025). The EPA is satisfied that where remediation has been completed it was done do in accordance with the requirements of the CRA and therefore issued a notice of completion (notice no. 20144404). The EPA is also satisfied that the contaminated at the site is no longer serious enough to warrant regulation. Accordingly the EPA issued a notice to end significantly contaminated land declaration (notice no. 20144405).

7.0 PROCEDURE

Operational Areas

For each operational area (those that have been developed and are operating under a specific EMP), the review for compliance with the CSMP would include:

- A site visit to confirm conditions are as documented and expected
- A meeting with the Site Manager, with minutes taken as a record
- Review any Work Management Plans
- Review the implementation of any Work Management Plans (WMP)
- Review of documentation required under the specific EMP such as records of inspections
- Verification that the EMP is being implemented via documentation review and staff interviews
- Identification of any proposed changes to operations or site modifications that would trigger the requirement for a WMP.

Non-Operational Areas

For non-operational areas (areas that are not leased for operations, areas currently under development, or common infrastructure areas such as access roads) the review for compliance with the CSMP would include:

- Site inspection of capping and drainage to verify consistency with anticipated conditions to note any degradation or damage
- Review of the Site EMP
- Verification that the Work Management Plan (WMP) process is being followed for areas being developed. The adequacy of the WMP and the conformance with the WMP are subject to separate audit processes
- Review of documentation for any areas modified since the previous review.

Statement of Compliance

The annual review would determine whether or not the CSMP has been complied with. It would note corrective measures required to remedy any non-conformances

8.0 REVIEW

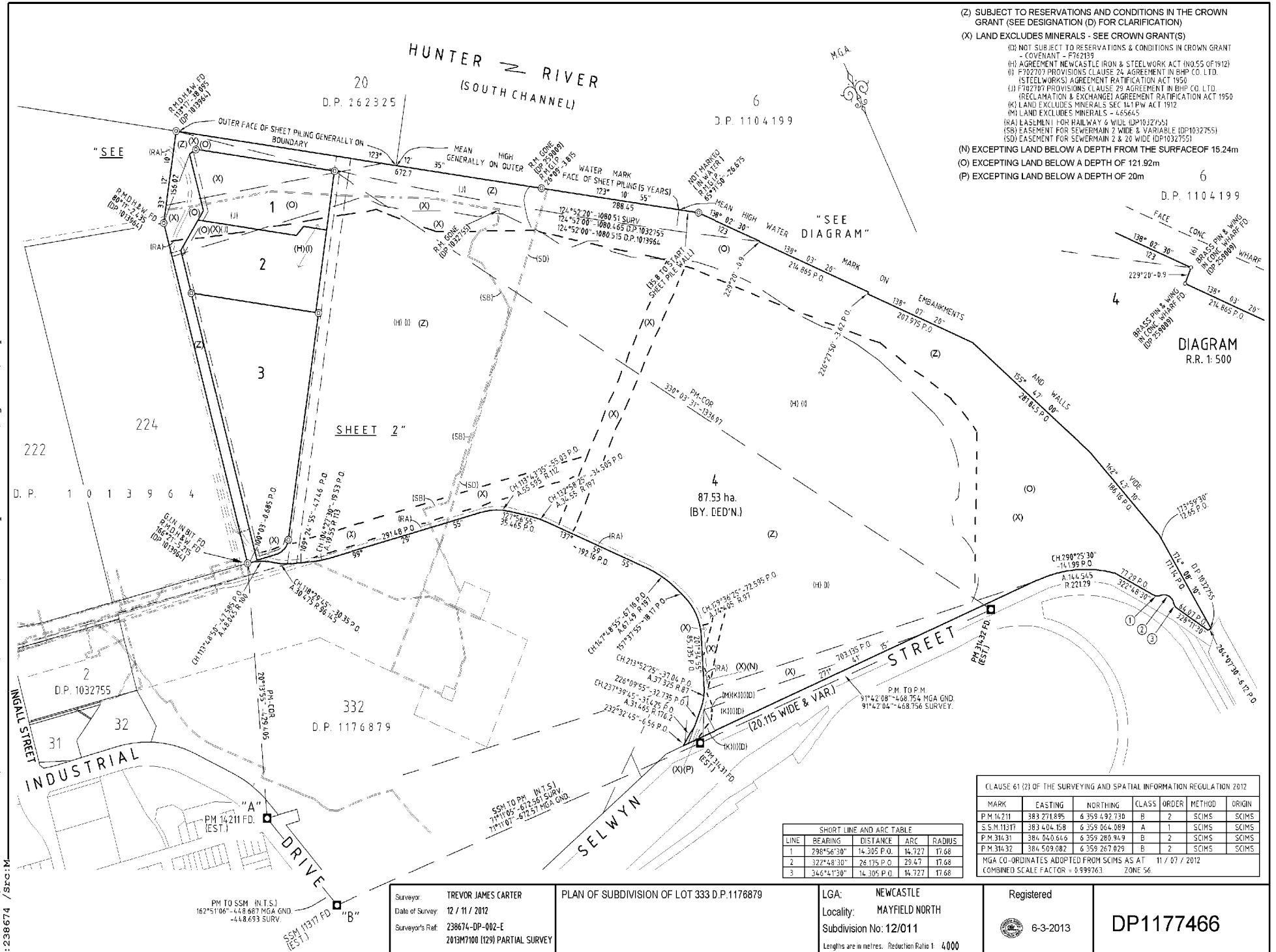
A review of this procedure will be conducted in accordance with the internal audit schedule or more regularly as required.

The review will make recommendations for any changes in the review process or how the site is managed so that remediation measures are maintained.

Appendix C

Subdivision Plan

Appendix C Subdivision Plan



(Z) SUBJECT TO RESERVATIONS AND CONDITIONS IN THE CROWN GRANT (SEE DESIGNATION (D) FOR CLARIFICATION)

(X) LAND EXCLUDES MINERALS - SEE CROWN GRANT(S)

(D) NOT SUBJECT TO RESERVATIONS & CONDITIONS IN CROWN GRANT - COVENANT - F762139
(H) AGREEMENT NEWCASTLE IRON & STEELWORK ACT (NO.55 OF 1912)
(I) F702707 PROVISIONS CLAUSE 24 AGREEMENT IN BHP CO. LTD. (STEELWORKS) AGREEMENT RATIFICATION ACT 1950
(J) F702707 PROVISIONS CLAUSE 25 AGREEMENT IN BHP CO. LTD. (RECLAMATION & EXCHANGE) AGREEMENT RATIFICATION ACT 1950
(K) LAND EXCLUDES MINERALS SEC 141 PW ACT 1912
(M) LAND EXCLUDES MINERALS - 465645
(RA) EASEMENT FOR RAILWAY 6 WIDE (DP1032755)
(SB) EASEMENT FOR SEWERMAIN 2 WIDE & VARIABLE (DP1032755)
(SD) EASEMENT FOR SEWERMAIN 2 & 20 WIDE (DP1032755)

(N) EXCEPTING LAND BELOW A DEPTH FROM THE SURFACEOF 15.24m

(O) EXCEPTING LAND BELOW A DEPTH OF 121.92m

(P) EXCEPTING LAND BELOW A DEPTH OF 20m

SHORT LINE AND ARC TABLE				
LINE	BEARING	DISTANCE	ARC	RADIUS
1	298°56'30"	14.305 P.O.	14.727	17.68
2	322°48'30"	26.175 P.O.	29.47	17.68
3	346°41'30"	14.305 P.O.	14.727	17.68

CLAUSE 61 (2) OF THE SURVEYING AND SPATIAL INFORMATION REGULATION 2012

MARK	EASTING	NORTHING	CLASS	ORDER	METHOD	ORIGIN
P.M.14211	383 271.895	6 359 492.730	B	2	SCIMS	SCIMS
S.S.M.11317	383 404.158	6 359 064.089	A	1	SCIMS	SCIMS
P.M.31431	384 040.646	6 359 280.949	B	2	SCIMS	SCIMS
P.M.31432	384 509.082	6 359 267.029	B	2	SCIMS	SCIMS

MGA CO-ORDINATES ADOPTED FROM SCIMS AS AT 11 / 07 / 2012
COMBINED SCALE FACTOR = 0.999763 ZONE 56.

Surveyor:	TREVOR JAMES CARTER
Date of Survey:	12 / 11 / 2012
Surveyor's Ref:	238674-DP-002-E
	2013M7100 (129) PARTIAL SURVEY

PLAN OF SUBDIVISION OF LOT 333 D.P.1176879

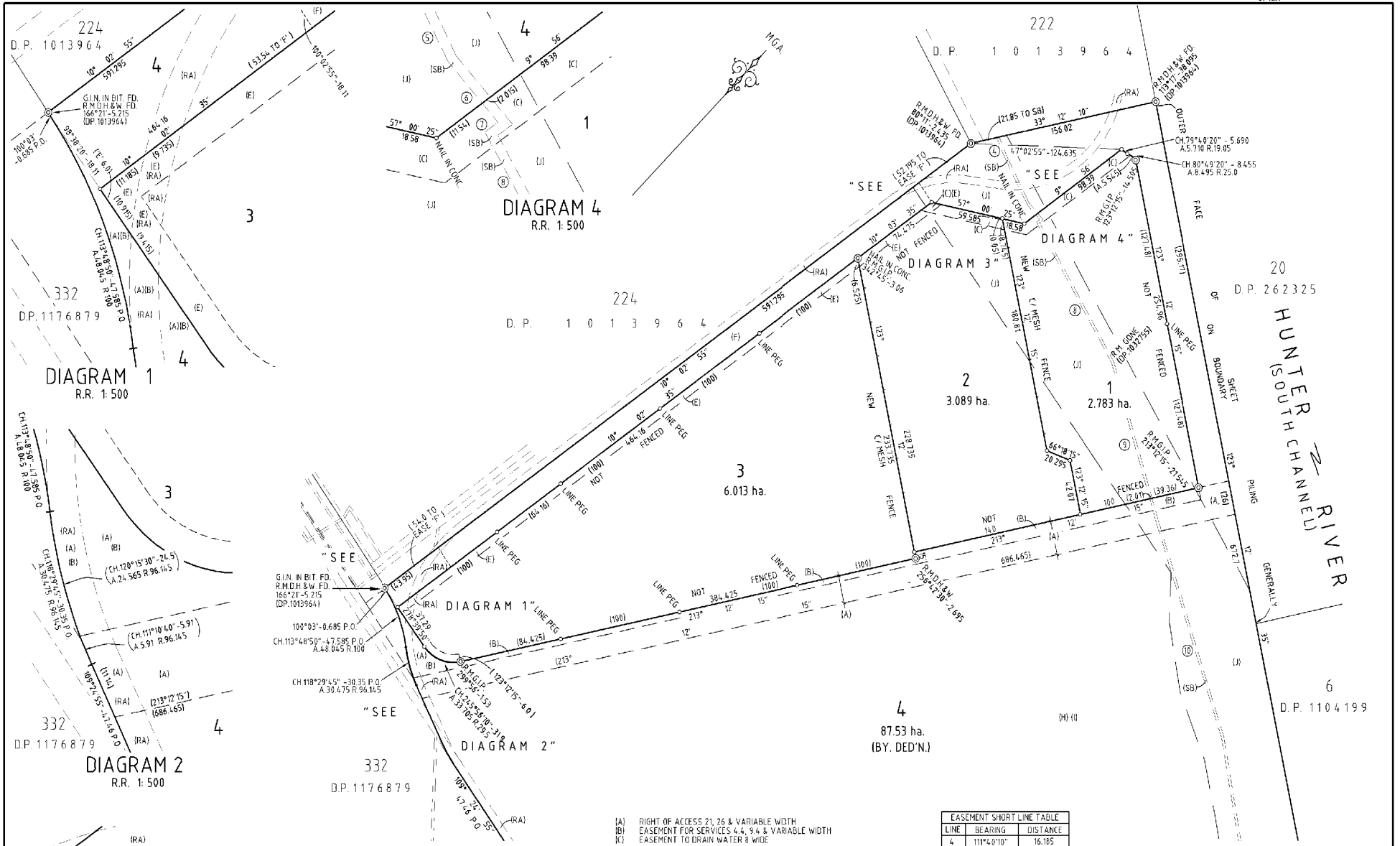
LGA: NEWCASTLE
Locality: MAYFIELD NORTH
Subdivision No: 12/011
Lengths are in metres. Reduction Ratio 1: 4000

Registered 6-3-2013

DP1177466

REVIEW 1-110213

10 20 30 40 50 Table of mm 90 100 110 120 130 140



(A) RIGHT OF ACCESS 21, 26 & VARIABLE WIDTH
(B) EASEMENT FOR SERVICES 4.4, 9.4 & VARIABLE WIDTH
(C) EASEMENT TO DRAIN WATER 8 WIDE
(D) NOT SUBJECT TO RESERVATIONS & CONDITIONS IN CROWN GRANT - COVENANT - F762139
(E) RIGHT OF ACCESS 6 WIDE
(F) EASEMENT TO DRAIN WATER VARIABLE WIDTH
(H) AGREEMENT NEWCASTLE IRON & STEELWORK ACT (NO.55 OF1912)
(I) F702707 PROVISIONS CLAUSE 24 AGREEMENT IN BHP CO. LTD. (STEELWORKS) AGREEMENT RATIFICATION ACT 1950
(J) F702707 PROVISIONS CLAUSE 29 AGREEMENT IN BHP CO. LTD. (RECLAMATION & EXCHANGE) AGREEMENT RATIFICATION ACT 1950
(RA) EASEMENT FOR RAILWAY 6 WIDE (DP1032755)
(SB) EASEMENT FOR SEWERMAIN 2 WIDE & VARIABLE (DP1032755)

EASEMENT SHORT LINE TABLE		
LINE	BEARING	DISTANCE
4	111°40'10"	16.185
5	167°39'20"	40.67
6	93°15'	15.47
7	190°49'10"	3.29
8	104°51'15"	123.5
9	118°04'35"	128.79
10	116°47'35"	171.15

Surveyor: TREVOR JAMES CARTER Date of Survey: 12 / 11 / 2012 Surveyor's Ref: 238674-DP-002-E 2013M7100 (129) PARTIAL SURVEY	PLAN OF SUBDIVISION OF LOT 333 D.P.1176879	LGA: NEWCASTLE Locality: MAYFIELD NORTH Subdivision No: 12/011 Lengths are in metres. Reduction Ratio 1: 2000	Registered 6-3-2013	DP1177466

10 20 30 40 50 Table of mm 90 100 110 120 130 140

REVIEW 1-110213

DEPOSITED PLAN ADMINISTRATION SHEET

SHEET 1 OF 2 SHEET(S)

Office Use Only

Registered: 6-3-2013

Title System: TORRENS

Purpose: SUBDIVISION

Office Use Only

DP1177466

PLAN OF SUBDIVISION OF LOT 333 D.P.1176879

LGA: NEWCASTLE

Locality: MAYFIELD NORTH

Parish: NEWCASTLE

County: NORTHUMBERLAND

Crown Lands NSW/Western Lands Office Approval

I ..... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature:.....

Date:.....

File Number:.....

Office:.....

Subdivision Certificate

I, GARY WEBB, CHIEF EXECUTIVE OFFICER

Authorised Person/~~General Manager/*Accredited Certifier~~, certify that the provisions of s.109J of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: Gary Webb

Accreditation number: —

Consent Authority: Newcastle Port Corporation

Date of endorsement: 29/01/2013

Subdivision Certificate number: 12/011

File number: A382663

*Strike through if inapplicable.

Survey Certificate

I, TREVOR JAMES CARTER

of ADW JOHNSON PTY LIMITED
7/335 HILLSBOROUGH ROAD, WARNERS BAY, NSW 2282

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) ~~The land shown in the plan was surveyed in accordance with the Surveying and Spatial Information Regulation 2012, is accurate and the survey was completed on .....~~

*(b) The part of the land shown in the plan (*being/*excluding ^ .... BEING LOTS 1, 2 & 3 EXCLUDING LINES SHOWN AS P.O. .) was surveyed in accordance with the *Surveying and Spatial Information Regulation 2012*, is accurate and the survey was completed on, 12 / 11 / 2012 . the part not surveyed was compiled in accordance with that Regulation.

*(c) The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2012*.

Signature: T. ..... Dated: 29/01/13

Surveyor ID: 749

Datum Line: 'A' - 'B'

Type: *Urban/*~~Rural~~

The terrain is *Level-Undulating / *~~Steep Mountainous.~~

*Strike through if inapplicable.

^Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Statements of intention to dedicate public roads, public reserves and drainage reserves.

Plans used in the preparation of this survey / compilation

DP.1116571
DP.1013964
DP.1032755
DP.259009
DP.1176879

If space insufficient continue on PLAN FORM 6A

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

Surveyor's Reference: 238674-DP-002-E
2013M7100(129) PARTIAL SURVEY

DEPOSITED PLAN ADMINISTRATION SHEET

SHEET 2 OF 2 SHEET(S)

Registered: 6-3-2013

Office Use Only

Office Use Only

DP1177466

PLAN OF SUBDIVISION OF LOT 333 D.P.1176879

Subdivision Certificate No: 12/011

Date of Endorsement: 29/01/2013

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2012*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, AS AMENDED, IT IS INTENDED TO:

(A) CREATE:-

1. RIGHT OF ACCESS 21, 26 & VARIABLE WIDTH
2. EASEMENT FOR SERVICES 4.4, 9.4 & VARIABLE WIDTH
3. EASEMENT TO DRAIN WATER 8 WIDE
4. RIGHT OF ACCESS 6 WIDE
5. EASEMENT TO DRAIN WATER VARIABLE WIDTH

STREET ADDRESSES OF ALL LOTS ARE NOT AVAILABLE

Signed by: SIMON FURNESS

(formerly State Property Authority)

As delegate on behalf of the Government Property NSW but not so as to incur any personal liability in the presence of:

Signature of Witness

YASEMIN AKCA

Name of Witness

4-6 BLIGH ST, SYDNEY NSW 2000

Address of Witness

If space insufficient use additional annexure sheet

Surveyor's Reference: 238674-DP-002-E