2.0 Site and Surrounds

This section provides a detailed description of the site and its history, and describes the areas and land uses surrounding the site.

2.1 Site Location

The site is located on the former BHP Steelworks site (known as the Closure Area) in Mayfield, approximately 7 kilometres north west of the Newcastle Central Business District (CBD) as shown on **Figure 1-1**. The site comprises an area of approximately 90 hectares.

The site is located in an existing industrial area of the Port of Newcastle and abuts the South Arm of the Hunter River to the north and east, IIP and the Carrington Coal Terminal, owned and operated by the Port Waratah Coal Service, to the south and south west and OneSteel to the west as shown on **Figure 1-2**. Surrounding land use comprises predominantly industrial development with residential development located further to the south across Industrial Drive, as detailed in **Section 2.6**.

The main road access to the site is from Selwyn Street and Ingall Street both via Industrial Drive, which joins to the Pacific Highway and New England Highway to the north west. The site is also accessible to cargo ships via the shipping channel in the South Arm of the Hunter River. Rail infrastructure is also available to service the site via a spur line which connects with the Port Waratah Loop and Main North Corridor.

2.2 Legal Description

The land to which this proposal is associated forms part of the former BHP Steelworks Closure Area. The property description and ownership is listed in **Table 2-1**.

Table 2-1: Land Description and Land Ownership

Land Description	Land Ownership
Part of Lot 33 D.P. 1116571	SPA (NPC has signed a contract of sale with SPA for ownership of the land)

2.3 Site History

The site has a long history of industrial use. From 1866 to 1893 the site was used for copper smelting. Between 1915 and 1999 the site was used by BHP for iron and steelmaking. In 1999, the Steelworks ceased operation and demolition of the buildings and structures commenced a year later. Remediation of the site commenced in 2006 and is ongoing, and redevelopment of the site for industrial port-related uses, such as a general cargo handling facility, began in 2009 in accordance with existing development consents. Further details on the history of land use/activities undertaken on the site are provided in **Table 2-2**.

Table 2-2: History of Land Use on the Site

Date	History of Land Use
Pre 1866	Primarily swamp land, mangroves and scrub. Minor farming and dairying was undertaken within this area.
1866 – 1893	Clearing of land for port use, and construction and operation of a copper smelter by the Wallaroo and Moonta Mining and Smelting Co.
1896 – 1906	BHP purchases the copper smelter site and other land along the Hunter River.
1913	Construction of the BHP Steelworks commences.
1915	Steelworks operations begin on-site.
1992	Koppers Carbon Materials and Chemicals Pty Ltd (Koppers) commenced operation (elevated pipeline and wharf) in their current location in 1992. They have a licence to operate until 2017 which includes a two-year shutdown period for relocation.

Date	History of Land Use
1997	BHP announces closure of the Iron and Steelmaking component of the BHP Steelworks.
1999	Iron and Steelmaking operations cease.
2000	An EIS for demolition of the Steelworks, remediation of the Closure Area and development of a MPT is prepared. Demolition of some Steelworks buildings and structures begins.
2001	Development consent from the DoP is issued for demolition of the Steelworks, remediation of the Closure Area and development of a MPT. The Environment Protection Authority (EPA) (now the Department of Environment, Climate Change and Water or DECCW) declare the Closure Site to be a remediation site under Section 21 of the *Contaminated Land Management Act 1997*.
2002	Ownership of the part of the former Steelworks site known as the Closure Area is transferred to the State Government.
2003	The Regional Land Management Corporation (RLMC) (now HDC) was created by the State Government to manage the day-to-day activities of former BHP land and other crown land in the Lower Hunter Region, including remediation and redevelopment works for the Closure Area.
2004	A Remediation Action Plan (RAP) was prepared to address contamination issues associated with soils and groundwater. BHP completes demolition and removal of buildings and structures.
2005	A Voluntary Remediation Agreement (VRA) for the remediation of the site was signed by the Department of Environment and Conservation (DEC) (now DECCW) and the RLMC (now HDC). The VRA establishes the remediation strategy for the site.
2006	Priority remediation works, including capping and recontouring, installation of major drains, and installation of a subterranean barrier wall commence in accordance with the 2005 VRA.
2007	The control of the Closure Area is transferred from the RLMC to the HDC. Demolition of the majority of buildings and structures on the site is completed.
2008	Priority remediation works, including capping and recontouring, installation of major drains, and installation of a subterranean barrier wall in Area 1 of the Closure Area are completed (refer to **Section 2.5.1**). In December 2008, the Minister for Planning announced the appointment of the Buildev Intertrade Consortium Pty Ltd as the preferred developer for 60 hectares of the IIP.
2009 – present	A Contaminated Site Management Plan (CSMP) for the Closure Area was prepared in September 2009 by HDC. The CSMP provides a common framework for the design, implementation, completion, use and maintenance of works across the whole Closure Area. The CSMP is applicable to remediation and redevelopment works. Recontouring, remediation and capping of the remainder of the site in line with development requirements is ongoing and due for completion in 2012. BHP currently occupy part of the site to undertake land-based remediation activities involving the treatment of contaminated sediments dredged from the Hunter River as part of the Hunter River Remediation Project (HRRP). In accordance with the 2001 consent, a general cargo handling facility known as Mayfield No. 4 Berth is constructed and commenced operation in 2010. NPC has signed a contract of sale with SPA for ownership of the site. The execution is subject to satisfying several conditions.

Source: URS, 2000, SKM 2004 and RLMC 2006

2.4 Site Planning History

The 2001 consent recognises a site Masterplan for Area 1 (refer to **Section 2.5.1**) , which identifies preferred port-related activities to guide future development on-site. NPC has adopted this plan as part of its marketing strategy. However, there is no formal approval for the Masterplan, nor is there a coordinated approach to development on the site.

A number of modifications have been made to the 2001 consent between 2001 and 2009. The most recent modification approved in 2009 allowed alteration of the alignment of the railway line. The modifications and a description of the associated works are detailed in **Figure 2-1**.

2.5 Site Description

The site is relatively flat and largely devoid of vegetation, infrastructure and structures (refer to **Figure 2-2**). A large portion of the site has been remediated and sealed with asphalt as part of the remediation works. The foreshore area of the site has new sheetpile wall in places, and also old sheetpile wall, rip-rap and timber structures. The new sheetpile was installed along the north western length of the foreshore as part of the BHP HRRP. A description of the ongoing remediation activities at the site, the status of redevelopment of the site for industrial port-related uses, and existing infrastructure available to the site is provided in the sections below.

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2001 CONSENT AND MODIFICATIONS

6 APRIL 2001 (DA 293-08-00)	Approval for a multi-purpose and container terminal, demolition and remediation within the Closure Area
29 JUNE 2001 (DA 293-08-00-M1)	Timing of the establishment of a Community Consultative Committee
13 AUGUST 2001 (DA 293-08-00-M2)	Excision of Heritage Areas from the development area
15 FEBRUARY 2002 (DA 293-08-00-M3)	Protection of fig trees and noise monitoring requirements
16 SEPTEMBER 2003 (MOD-77-7-2003i)	Burial of Blast Furnace No. 1 slag stump
15 SEPTEMBER 2005 (MOD-60-4-2005i)	Land description, soil capping, groundwater management, stormwater, capping exemptions and transport infrastructure
21 AUGUST 2007 (MOD-64-7-2007i)	Alteration of the alignment of the railway lines and relocation of two major stormwater drains
21 NOVEMBER 2008 (MOD-56-7-2008)	Alteration and relocation of the general cargo handling facility, refurbishment of the existing Mayfield No.4 Berth and change in site access from Crebert Street to Selwyn Street
30 MARCH 2009 (MOD-06-02-2009)	Minor change in rail alignment

AECOM

2001 CONSENT AND MODIFICATIONS
Environmental Assessment
Mayfield Site Port-Related Activities Concept Plan

Figure 2-1

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Figure 2-2: Existing Site (with Carrington Coal Terminal in the Foreground)

2.5.1 Remediation

Remediation works have been conducted at the site since 2006 in accordance with the 2001 consent, and are scheduled for completion in 2012. The remediation strategy for the site is based on a strategy of containment (through capping and groundwater controls) rather than treatment, although some 'hotspots' of contamination have been excavated and treated. The remediation activities on the site are being undertaken in three stages, identified as Stage 1a, Stage 1b and Stage 2:

- **Stage 1a.** The Stage 1a works, consisting of priority remediation activities, including capping and recontouring the site, installation of major drains (known as the Eastern and Western Drains), and installation of a subterranean barrier wall have been completed. The levels and grades achieved during recontouring and capping were designed to be compatible with anticipated future land uses, while also meeting remediation objectives. The area subject to Stage 1a works is known as Area 1, which is located in the centre of the site within the barrier wall. A large portion of this area has been covered with a two-coat bitumen seal as part of the capping.
- **Stage 1b.** The Stage 1b works include installation of a low permeability cap in the northern portion of Area 1, adjacent to the foreshore of the South Arm of the Hunter River. However, these works have been deferred pending completion of the HRRP by BHP (HDC, 2008). BHP currently uses over 30 hectares of Area 1 to treat contaminated sediments dredged from the South Arm of the Hunter River. The HRRP is scheduled for completion no later than August 2012.
- **Stage 2.** The Stage 2 works primarily involve recontouring and installation of a low permeability cap in Area 2. Area 2 is located outside the barrier wall, to the south east and north west of Area 1. The Stage 2 works commenced in 2010 and will be complete in 2012.

The locations of Areas 1 and 2, within which the Stage 1a, Stage 1b, and Stage 2 remediation works have been or are currently being conducted is shown in **Figure 2-3**. The area of the site utilised by BHP for the HRRP is shown on **Figure 2-4**.

Further details regarding remediation activities on the site are provided in **Section 9.9**.

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AECOM

EXISTING REMEDIATION AREAS

Environmental Assessment

Mayfield Site Port-Related Activities Concept Plan

Figure 2-3

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AECOM

EXISTING SITE

Environmental Assessment

Mayfield Site Port-Related Activities Concept Plan

Figure 2-4

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2.5.2 Port-Related Industrial Uses

NPC and Koppers currently conduct port-related industrial activities at the site.

Koppers has a plant located to the north west of the site which consists of two continuous tar distillation units and a naphthalene still. Ancillary facilities to the plant, including a dedicated wharf (Ex-BHP No. 6 Berth) and pipeline, are located at the site. Koppers currently utilise the Ex-BHP No.6 Berth for unloading coal, tar and pitch products. An aboveground pipeline with associated infrastructure for handling coal tar and pitch products runs east to west across the northern portion of the site (refer to **Figure 2-4**). Koppers has a lease for use of the Ex-BHP No.6 Berth and operation of the pipeline.

In accordance with the 2001 consent, NPC has constructed a general cargo handling facility, known as Mayfield No.4 Berth, at the site (refer to **Figure 2-4**). The berth became operational in 2010 and provides facilities for the import and export of a range of cargo types, including ammonium nitrate (AN), containerised goods, break bulk including timber logs and aluminium ingots and logs, and large industrial equipment. The facility consists of a wharf structure with one berth, mobile cranes for unloading goods, a hardstand area, demountable buildings, and access road (refer to **Figure 2-5**). There are no processing operations or storage facilities at Mayfield No. 4 Berth (NPC, 2009).

Figure 2-5: Mayfield No. 4 Berth (With Kooragang Island in the Background)

2.5.3 Infrastructure and Services

The site is accessible by road, rail, and via the shipping channel in the South Arm of the Hunter River (refer to **Figure 2-4**). The main road access to the site is from Selwyn Street and Ingall Street both via Industrial Drive, which joins to the Pacific Highway and New England Highway to the north west. There are also internal roads within the site which provide access to Mayfield No. 4 Berth and the HRRP.

Rail infrastructure is available to service the site. Rail access is from the Morandoo Sidings and Port Waratah Loop to the south, via a level crossing over Selwyn Street.

The site is accessible to cargo ships via the shipping channel in the South Arm of the Hunter River. The existing shipping channel, turning circle and berth boxes are suitable to facilitate import and export operations at these berths. Two existing berths, Mayfield No. 4 Berth and Ex-BHP No. 6 Berth, are located at the site.

Infrastructure and services include an internal road connection to Selwyn Street, stormwater drainage, lighting, and limited services and utilities infrastructure. Only limited electricity services are currently provided to the site.

An elevated pipeline structure owned by Koppers and a firewater supply pipeline runs west to east through the site roughly parallel to the foreshore of the South Arm of the Hunter River, terminating at Ex-BHP No. 6 Berth. Minor infrastructure supports Ex-BHP No. 6 Berth and Koppers operations including wharf structures, a hardstand area with stormwater drainage, and security fencing.

The stormwater drainage network in place at the site includes the Eastern and Western Drains, open channels, pipes and discharge structures into the South Arm of the Hunter River. The main drains receive runoff from across the site via a series of open drains and trunk stormwater pipes. There are also two temporary detention basins which retain water prior to discharge. The basins collect stormwater from across the site and promote the removal of sediment from the stormwater through settling. The site has been partly contoured to direct stormwater runoff into the stormwater drains. The contouring and drainage system have been designed to alleviate areas of ponding and reduce surface water infiltration.

The site is secured with chain wire fencing and security entrance gates.

2.6 Surrounding Land Use

The land surrounding the site is predominantly used for industrial and port-related activities as described below and shown on **Figure 1-2**.

North

To the north, the site is bordered by the South Arm of the Hunter River and Kooragang Island industrial area beyond. Industries operating in the Kooragang Island Industrial area include:

- Port Waratah Coal Service Kooragang Berth 4 to 6, used for the transfer of coal.
- Port Waratah Kooragang coal loading terminal. The terminal covers 160 hectares with an annual ship loading capacity of 77 million tonnes of coal (NPC, 2009). All coal received at the Kooragang coal loading terminal is delivered by rail.
- HiFert operates a fertiliser dispatch facility and distribution centre to the north east of the site.

West

- OneSteel operates a wire, rod and bar mill immediately to the west.
- Koppers operates a plant which consists of two continuous tar distillation units and a naphthalene still. Ancillary facilities include a dedicated wharf, pipeline, a large tank farm, a steam generating plant and a laboratory (Koppers, 2009).
- IIP is located to the south west. Buildev have partnered with logistics company Toll to form a consortium which is to provide general and freight (including port) related industry in this area (Minister for Planning, 2008).
- The nearest residential area is located at Mayfield, with the closest receptors approximately 900 metres from the site to the south west.

South

- Port Waratah Coal Service Carrington Coal Terminal and Dyke Berth No. 4 and 5. A 40-hectare site with an annual ship loading capacity of 25 million tonnes of coal (NPC, 2009). Coal received at the Carrington Coal Terminal is delivered by rail and road.
- Bulk fuel storage facility operated by BP is located approximately 0.8 kilometres to the south.
- Dyke Berth No. 1 utilised for Common Use and Dyke Berth No. 2 and Bulk Loader. This facility is used to export ore concentrates from mines at Elura and Parkes.
- Eastern Basin Distribution Centre. NPC owns No.1 and 2 East Basin wharves and leases them to Eastern Basin Distribution Centre. This multi-purpose cargo handling facility provides a wide range of break-bulk and containerised cargo handling services. The Eastern Basin Distribution Centre is a joint venture between Toll Port Logistics and R & H Transport (NPC, 2009). The centre provides ready access to rail services.
- GrainCorp Bulk Grain Terminals which operate storage and despatch facilities and Western Basin Berths No. 3 and No. 4.
- Other industries located to the south of include Toll Resources, Juice Terminals of Australia, GrainCorp, Svitzer Australia Tugh Berths, Azzura Marine and Forgacs Floating Dock.
- The suburbs of Tighes Hill, Maryville and Carrington are located within approximately 1 to 1.5 kilometres to the south of the site.

East

- Kooragang Island Berths 1 to 3. No. 2 Kooragang Berth is managed by DPWorld and it is used for unloading cement, vegetable oil, woodchip and bulk products (fertilisers, ammonia and AN etc).
- Kooragang Bulk Facilities (KBF), located next to No. 3 Kooragang Berth, operates a purpose-designed ship unloading and storage facility (using No. 3 Kooragang Berth) that handles alumina and petroleum coke, destined for the aluminium smelters at Tomago and Kurri Kurri. These raw materials are then transported by road to the smelters.
- A non-hazardous bulk liquids facility which handles a diverse range of edible vegetable oils and shortenings for export and import from the Cargill facility on Kooragang Island. The terminal is serviced by road, rail and ship. It is connected to No. 2 Kooragang Berth via a pipeline.
- Incitec Pivot Limited (IPL) operates a primary distribution centre for straight and blended fertilisers on Kooragang Island.
- Cement imports are handled by a bulk cement silo operated by Australian Cement on Kooragang Island. Road tankers transport the cement throughout the region.
- Orica operates an AN facility on Kooragang Island producing approximately 430,000 tonnes of AN products annually which are distributed by road and by ship. Immediately to the south of the Orica site is a Patricks warehousing and despatch facility.
- The GrainCorp Agriterminal on Kooragang Island is used for the storage and loading of cottonseed and other seeds and grains.
- Sawmillers Exporters Pty Ltd operates a major export facility on Kooragang Island for woodchips sourced from the north east forests of NSW.
- The residential suburb of Stockton is located approximately 1.5 kilometres to the south east of the site.

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3.0 Strategic and Project Justification

This section describes the strategic need and justification for the proposed concept as documented in the aims and objectives of relevant State and regional policies and plans, and based on the future trade forecast for NSW Ports. The consistency of the proposed concept with relevant laws, regulations and planning policies is described in **Section 6.0** of this EA.

3.1 Strategic Context

3.1.1 State Plan: A New Direction for NSW

The *NSW State Plan: A New Direction for NSW* (*NSW State Plan*) released in November 2006, sets out priorities for Government action over a ten year time span. The *NSW State Plan*, with 34 priorities and 60 targets, was designed to deliver better services and improve accountability across the public sector.

Priority six (P6) of the *NSW State Plan* is aimed at increasing business investment in rural and regional NSW. In response to P6, the *Regional Business Growth Plan – Hunter Region* was released in July 2006 to determine key actions to promote economic growth and increase the level of employment in the region. It identified key opportunities and actions required to attract investment to the region and increase the number of local jobs. "*Locating port-related industry on land beside Port of Newcastle*" has been defined as a high priority action and fits well with the priorities being set for employment generation in the region.

The *NSW State Plan* also refers to simplifying the planning process and improving access to industrial/employment lands, which when developed could increase demand for port facilities to satisfy increased import/export requirements.

By developing the site for port-related industrial uses, which would promote economic growth and provide employment opportunities (refer to **Section 9.10**), the proposed concept is consistent with the priorities set out in the *NSW State Plan* and the *Regional Business Growth Plan – Hunter Region.*

3.1.2 NSW Ports Growth Plan

In October 2003, the State Government's *NSW Ports Growth Plan* was announced. The Plan provides a framework within which Government, industry and the community would work to ensure future growth and development of port capacity in NSW. A core direction of the *NSW Ports Growth Plan* is for the former BHP Steelworks site to be secured for port use. The *NSW Ports Growth Plan* has identified that when Port Botany reaches capacity, the Port of Newcastle would be the State's next major container facility.

The *NSW Ports Growth Plan* intends to provide certainty for future port developments and to provide long-term capacity for containers, bulk goods and general cargo and enhance the economic efficiency of NSW ports. In summary, the *NSW Ports Growth Plan* identifies the role of each of NSW's major ports, the Port of Newcastle, the Port of Port Kembla, Port Botany and Port Jackson as:

- The former BHP steelworks site at the Port of Newcastle would be secured for port use. When Port Botany reaches capacity the Port of Newcastle would be the state's next major container facility.
- Containers, general cargo and car stevedoring from Port Jackson would be progressively encouraged to relocate to the Port of Port Kembla as existing leases expire, subject to satisfactory commercial negotiations being completed between the lessees and the Port Kembla Port Corporation.
- An Independent Commission of Inquiry would be held to examine Sydney Ports Corporation's Development Application and EIS to expand container facilities at Port Botany. The Commission of Inquiry would be open to community submissions.
- In relation to Port Jackson port lands, the Minister for Infrastructure, Planning and Natural Resources would develop a masterplan to:
    - Retain White Bay for working maritime uses;
    - Create an unbroken run of public access to the foreshore of the harbour between Woolloomooloo and the Anzac Bridge; and
    - Preserve Millers Point for a future iconic development.

The role the Port of Newcastle as the State's next major container facility, as outlined in the *NSW Ports Growth Plan,* is supported by planning through the *Lower Hunter Regional Strategy* as described in **Section 3.1.5**.

By developing the site for port-related industrial uses which would provide long-term capacity for handling containers, bulk goods and general cargo and enhance the economic efficiency of the NSW port system, the proposed concept is consistent with the *NSW Ports Growth Plan*.

3.1.3 State Infrastructure Strategy (2008-2018)

The *State Infrastructure Strategy* is a rolling 10-year plan for infrastructure projects to support service delivery. The *State Infrastructure Strategy* outlines planned financial outlays for NSW infrastructure. The *State Infrastructure Strategy* confirms that funding is available for the development of the Port of Newcastle, allowing for:

- Mayfield No. 4 Berth (completed);
- Strategic dredging of the Walsh Point Area; and
- Southern Breakwater works.

In accordance with the 2001 consent and in line with the *State Infrastructure Strategy*, the general cargo handling facility known as Mayfield No.4 Berth was constructed at the site. The berth became operational in 2010 providing facilities for the import and export of a range of cargo types, including AN, containerised goods, break bulk including timber logs and aluminium ingots and logs, and large industrial equipment.

3.1.4 Newcastle Port Environs Concept Proposal

Concept planning for the Port of Newcastle was undertaken by the Department of Infrastructure, Planning and Natural Resources (DIPNR, now the DoP) Newcastle Regional office in 2003. The *Newcastle Port Environs Concept Proposal* provides a strategic overview of the Port environment and identifies key developmental and environmental issues, categorising land areas for their potential use by industry or for conservation. In particular, the *Newcastle Port Environs Concept Proposal* aims to facilitate and encourage:

- The use of portside land by port-related industries;
- Land that is suitable for port-related industrial development being made available for such uses; and
- Opportunities that exist to build upon the competitive advantages evident in the Newcastle Port Environs for economic growth, including potential for deep water access, proximity to a major airport, and potential for infrastructure links.

By developing the site for port-related industrial uses, the proposed concept is consistent with the aims of the *Newcastle Port Environs Concept Proposal*.

3.1.5 Lower Hunter Regional Strategy

The *Lower Hunter Regional Strategy* was prepared by the DoP in October 2006. It outlines the strategic direction for the Lower Hunter Region and includes actions specific to transport. The economic challenges identified for the Lower Hunter Region are to:

- Maximise the economic opportunities associated with the Lower Hunter Region's competitive advantages, in particular its economic infrastructure and specialised centres;
- Ensure sufficient employment lands are available in appropriate locations, including within centres and as traditional industrial land, to provide sufficient capacity to accommodate growth in existing and emerging industries and businesses;
- Maintain or improve the employment self sufficiency of the Lower Hunter Region; and
- Ensure activity within the Lower Hunter Region complements rather than competes with the economies and communities of adjoining regions.

An action identified in the *Lower Hunter Regional Strategy* is to:

> *"Ensure that local planning provisions reflect and promote the role of the Port of Newcastle as identified in the NSW Port Growth Strategy, as the site for a second container port facility for NSW. This will include ensuring that local planning provisions maintain 'port-related' employment land around the Port of Newcastle for industries that specifically require port access".*

The proposed concept addresses the economic challenges of the Lower Hunter Region by increasing the land and waterfront infrastructure available in the Port of Newcastle for port-related activities. By accommodating growth in port-related industry and by providing employment opportunities during construction and the long-term operation of the proposed concept, the proposed concept would facilitate economic growth in the Lower Hunter Region.

3.2 Port Trade Forecast

The Port of Newcastle is the world's largest exporter of coal and Australia's largest single port in bulk terms (DoP, 2008). NPC is continually monitoring current trade, and forecasting potential trade demand situations. The proposed concept recognises the Ports trade forecast while maintaining flexibility to adapt to the changing trade forecasts and priorities over time. The proposed concept recognises the long lead times required in Port planning and the potential for changes in the nature of trade over time.

The proposed concept, prepared in accordance with the *NSW Ports Growth Plan* and the NPC's strategic planning for the site, aims to ensure future development of the site occurs in a coordinated manner to promote the highest and best use of the site in accommodating trade forecast needs.

The site has been identified by NPC as one of several strategic port locations, under NPC management, that would deliver on the NPC trade requirements for the next 30 years.

3.2.1 Port of Newcastle Existing Trade

The Port of Newcastle currently facilitates the export and import of a diverse range of products both overseas and to other Australian Ports, accounting for 14 percent of Australia's total exports.

Exports, primarily to overseas destinations, accounted for the majority of Port of Newcastle activities in 2006/07 (95 percent by volume), with 82.2 million tonnes of commodities exported overseas and 297,000 tonnes to other Australian ports. Imports from other Australian ports to the Port of Newcastle totalled 1.82 million tonnes in 2006/07, whilst overseas imports reached 1.14 million tonnes. In 2006/07 the total volume of commodities imported and exported through the Port of Newcastle was 85.5 million tonnes, representing a trade value of $8.3 billion (DoP, 2008). In 2008/09 the total volume of commodities increased to 95.8 million tonnes.

The existing 16 berths at the Port of Newcastle facilitate the import and export of trades such as coal (Dyke Berth No. 4 and No. 5, Kooragang Berth No. 4, No. 5 and No. 6), project cargo/break bulk (Carrington West Basin 4, Carrington East Basin 1 and Basin 2), various cargo including vacuum unloads of cement, alumina, petroleum coke, pipe load of vegetable oil, woodchips, fertiliser, other bulk cargos (Kooragang Berth No. 2 and No. 3), grain (Carrington West Basin 3), concentrates, petroleum discharge. (Dyke Berth No. 2), tar and pitch (South Arm No. 6 Berth), and general cargo (Mayfield Berth No. 4).

3.2.2 Port Trade Forecasts

Current operations at the Port of Newcastle do not have sufficient capacity to accommodate all growth indicated in the trade forecasts, nor would the existing operations have capacity to facilitate expansion into strategic sectors. The proposed concept is designed to align development of the site's precincts with the anticipated trade forecasts for the Port of Newcastle.

Bulk and General Cargo

Bulk and general cargo imported at the Port of Newcastle in 2006/07 include petroleum coke (238,061 tonnes), cement (106,303 tonnes), fertiliser (147,768 tonnes), and soybean/meal (127,116 tonnes) (DoP 2008). Products exported include grains (542,962 tonnes exported overseas and 21,600 tonnes exported to the domestic market) and sands (15,969 tonnes),

The proposed concept anticipates that an additional 2.4 million tonnes per annum (MTPA) of bulk goods would be handled through the Port of Newcastle. The proposed Bulk and General Cargo Precinct would be developed to accommodate the growth in bulk and general cargo import and exports. Bulk goods to be imported would include grains, coke, cement, soda ash, fertiliser and meals. Trade types to be exported from the proposed Bulk and General Cargo Precinct include grains, coal and sand. Approximate volumes of each trade type are provided in **Section 5.0**.

General Purpose

General Cargo Handling Facility Mayfield No.4 Berth currently exports 0.1 million tonnes per annum of AN. This facility would remain as part of the proposed concept. Facilities currently accommodating project cargo and Ro/Ro imports and exports are located at Carrington Basin West No. 4, Carrington Basin East No. 1 and No. 2.

Capacity for general purpose operations is currently limited at the Port of Newcastle. Trade forecasts for general purpose operations by the year 2019 anticipate the need to accommodate approximately 1.05 million tonnes per annum of general purpose cargo including heavy machinery, Ro/Ro cargo, project cargo, steel products, timber products, AN (at existing throughput), and scrap metal (refer to **Section 5.0** for approximate trade volumes).

Container Trade

By 2035, container trade in NSW is expected to increase from 1.8 million in 2009 to 6.5 million TEU. This growth would consist of containerisation of consumable products and non-bulk industrial imports, and the growth in exports.

Analysis undertaken by AECOM and Access Economics (2003) for Sydney Ports Corporation estimated container throughput at Port Botany would approach 2.5 million TEU by 2016 and 3.3 million TEU by 2021. Even with the planned expansion of Port Botany, which would provide five new shipping berths with limits on capacity throughput of additional 3.2 million TEU, and with the proposed Port Kembla Outer Harbor Development which would handle approximately 1.2 million TEU, it is anticipated that the Port of Newcastle would need to handle the movement of a large volume of containers.

It is prudent to allow the Newcastle market to develop in advance of the need to divert trade from Port Botany, so that when the capacity is needed, the supply chain relationships key to ensuring the market's effective use of the Port of Newcastle, are already mature. To defer the capability until the last moment would lead to supply chain fragmentation and abnormally high switching costs.

Bulk Liquids

Australia has numerous off-shore and on-shore refining capabilities in areas such as the Carnarvon Basin, Gippsland Basin and Bass Strait. There are seven major oil refineries in Australia operated by the four major oil companies BP, Caltex, Mobil and Shell. Distribution of bulk fuel from the refineries is typically by ship. Refinery production is anticipated to increase by some 1.3 percent per year whilst the consumption of crude oil and its products is expected to increase by around 1.4 percent per year (Australian Bureau of Agriculture and Resource Economics (ABARE), 2005).

The transport sector consumes 72 percent of liquefied fuels in Australia. Assuming that fuel prices remain relatively consistent, it is predicted that this will continue to increase by some 1.2 percent per year over the next 25 years. Fuel demand in the Hunter Region is unlikely to slow. The Lower Hunter Region is the sixth largest urban area in Australia and one of NSW major centres of economic activity indicating high demand for fuels. Similarly, strong mining and agricultural sectors in the Upper Hunter Region indicate increasing demand for transport and associated fuel consumption.

The Port of Newcastle currently handles only a small volume of bulk liquids, and existing practices of delivering fuels to the Hunter Region by road and pipeline from Sydney are limited by capacity and cost. Provision of storage and distribution facilities would enable links to free-flowing transport distribution in the Hunter Region which offers importers and exporters a seamless delivery network to and from the Port of Newcastle.

Research into the feasibility of a biofuels market in Australia concluded that there were market barriers to biofuels and that the Federal Government target of 350 million litres of biofuel production by 2010 was unlikely to be achievable (Commonwealth Scientific and Industrial Research Organisation (CSIRO), ABARE and the Bureau of Transport and Regional Economics (BTRE, 2003)). In response to these findings, the Federal Government developed a *Biofuels Action Plan*, in consultation with individual oil companies, setting the path to achieve the 350 million litres target.

The proposed concept aids the delivery of the national objectives through the provision of a Bulk Liquids Facility suitable to store, blend and distribute biofuels, which would improve the national volume and accessibility to the product.