4.0 Alternatives

Section 3 described the need for additional port capacity in NSW as documented in the aims and objectives of relevant State and regional policies and plans, and based on the future trade forecast for containers, bulk goods and general cargo. This section describes the process of assessing alternatives and selecting a preferred alternative to meet these needs. The alternatives selection process is shown in **Figure 4-1**.

4.1 Development of Existing or New Ports

The potential for expansion of Port Botany, the Port of Port Kembla and Port Jackson in Sydney Harbour are alternatives to expansion of the Port of Newcastle. The alternative of developing a new port was also considered. However as detailed in **Section 3.0** and discussed below, the State Government, through the *NSW Ports Growth Plan* and other state policies and plans has identified the Port of Newcastle, Port Botany and Port of Port Kembla as the three key trading ports for NSW into the future as all have, to varying degrees, the capacity to accommodate increased trade and the potential to expand, or are currently in the process of expanding operations. The reasons development of existing ports or new ports as alternatives to the expansion of the Port of Newcastle were eliminated are discussed in the following sections.

4.1.1 Port Botany

Port Botany handles a third of Australia's container traffic, and is presently the largest container port in NSW (DoP, 2008). The port also handles the import and export of bulk liquids and gases. The Port is owned and operated by Sydney Port Corporation (SPC), and services the needs of the immediate Sydney market in particular. Port Botany currently handles 1.8 million TEU of containers each year.

To secure ongoing economic growth for NSW, SPC is currently expanding the container terminal facilities and plans to expand bulk liquids handling facilities (DoP 2008). The proposal includes expansion of the Port on 60 hectares of reclaimed land to cater for growth and the first new berths are expected be ready for trade in 2012 (DoP, 2008). The proposal for expansion of the Port was approved by the Minister for Planning on 13 October 2005 with limits on the capacity of the Port throughput to 3.2 million TEUs of containers per annum.

While the expansion of Port Botany will help secure economic growth in NSW, the current and recent trends in freight growth rates indicate that the 3.2 million TEU capacity may be reached much sooner than expected. Due to the close proximity of the Port to Sydney Airport and given that the current expansion required a large amount of land reclamation it is expected that this will be the last major expansion of Port Botany, and that further expansion to accommodate additional forecast trade volume will not be possible.

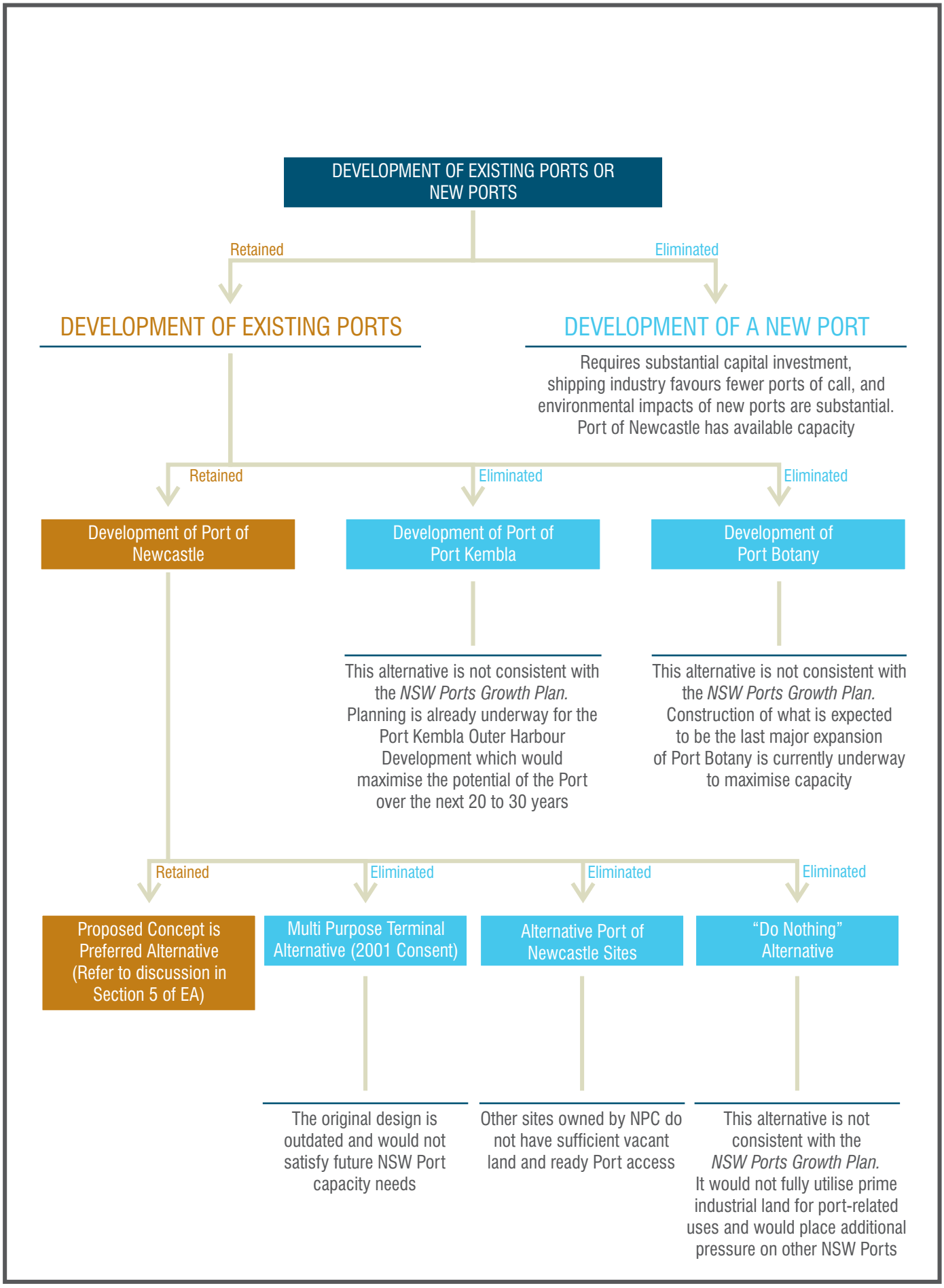
Further expansion of Port Botany was eliminated as an alternative to expansion of the Port of Newcastle on the basis that it would not be consistent with the strategic role of the Ports as identified in the *NSW Ports Growth Plan*, which identified the Port of Newcastle, Port Botany and Port of Port Kembla as the three key trading ports for NSW. It was also eliminated because Port Botany primarily services the needs of the immediate Sydney market and does not have proximity to markets in the Hunter Region, which would be best served by the Port of Newcastle. In addition, Port Botany is currently undergoing what is expected to be its last major expansion.

4.1.2 Port of Port Kembla

The Port of Port Kembla is managed by the Port Kembla Port Corporation (PKPC). Historically, the Port was primarily a bulk commodities port servicing coal, grain and other mineral exports, steel production and export and smaller volumes of bulk solids and liquids including fertilisers, cement clinker, sulphuric acid and fuel oil. In 2008/09 total trade through the Port reached 26.4 million tonnes. The major cargoes handled comprised 13 million tonnes of export coal and 8 million tonnes of steel related products (iron ore imports and steel product exports).

In recent years, PKPC has sought to diversify the mix of cargoes traded through the Port to service a broader range of customers and maximise growth opportunities for the business and the Port. The Port primarily services the Illawarra Region and customers in the Sydney market. The Port recently begun receiving a portion of shipping, cargo and car stevedoring previously handled through Port Jackson in Sydney Harbour as part of the State Government's *NSW Ports Growth Plan*. Car imports to the Port of Port Kembla commenced in October 2007, with the bulk of the car imports relocated to the Port of Port Kembla in November 2008.

"This page has been left blank intentionally"



AECOM

ALTERNATIVES SELECTION PROCESS
Environmental Assessment
Mayfield Site Port-Related Activities Concept Plan

Figure 4-1

"This page has been left blank intentionally"

To date, the relocated trades have been accommodated at the Port of Port Kembla Inner Harbour within a newly built general cargo handling facility. However, a proposal was submitted to DoP in 2010 for the progressive completion of the Outer Harbour development. Completion of the Outer Harbour development will require creation of at least 42 hectares of land dedicated to port activity. The reclaimed land is proposed to be divided into two main areas, one devoted to the import and export of dry bulk, break bulk and bulk liquid cargoes (multi-purpose terminals) and one devoted to container trade (container terminals). The Outer Harbour development will accommodate the trade forecast for the Port over the next 20 to 30 years.

Further expansion of the Port of Port Kembla was eliminated as an alternative to expansion of the Port of Newcastle on the basis that it would not be consistent with the strategic role of the Ports as identified in the *NSW Ports Growth Plan*, which identified the Port of Newcastle, Port Botany and Port of Port Kembla as the three key trading ports for NSW. It was also eliminated because the Port of Port Kembla primarily services the needs of the Illawarra Region and Sydney, and does not have proximity to markets in the Hunter Region which would be best served by the Port of Newcastle. In addition, the Port of Port Kembla is proposing the Outer Harbor development which will accommodate the trade forecast for the Port over the next 20 to 30 years.

4.1.3 Port Jackson

As discussed above, the role of Port Jackson as an industrial and cargo handling port continues to diminish with a portion of the shipping, cargo and car stevedoring activities being diverted to the Port of Port Kembla in recent years. The increasing demand for foreshore land for residential and a variety of commercial and recreational uses has been the impetus for the diminishing role of Port Jackson as an industrial and cargo handling port. Accordingly, this alternative was eliminated as an alternative to expansion of the Port of Newcastle.

4.1.4 Development of a New Port

While the existing ports in Botany, Port Kembla and Newcastle continue to provide opportunities to accommodate forecast increased trade, there is little impetus to establish new ports due to the substantial capital investment required to provide port and ancillary road, rail and service infrastructure. There are also significant environmental issues associated with developing a new port. In addition, the shipping industry has shown that fewer points of call on international shipping routes are preferred (URS, 2003). For these reasons, the alternative of establishing a new port was eliminated from further consideration.

4.1.5 Conclusion

The ability of the NSW port system to meet the forecast trade growth of the State is reliant on the planned and future expansion of all of the three major ports at Newcastle, Botany and Port Kembla, and cannot be achieved by the expansion of one or two ports alone. Therefore, there is a need to expand the Port of Newcastle in order for the Port to meet its defined strategic role and satisfy the needs of the State. In addition, Port Botany and the Port of Port Kembla are currently conducting or proposing major expansions to accommodate the trade forecast for the Sydney markets and Illawarra Region primarily.

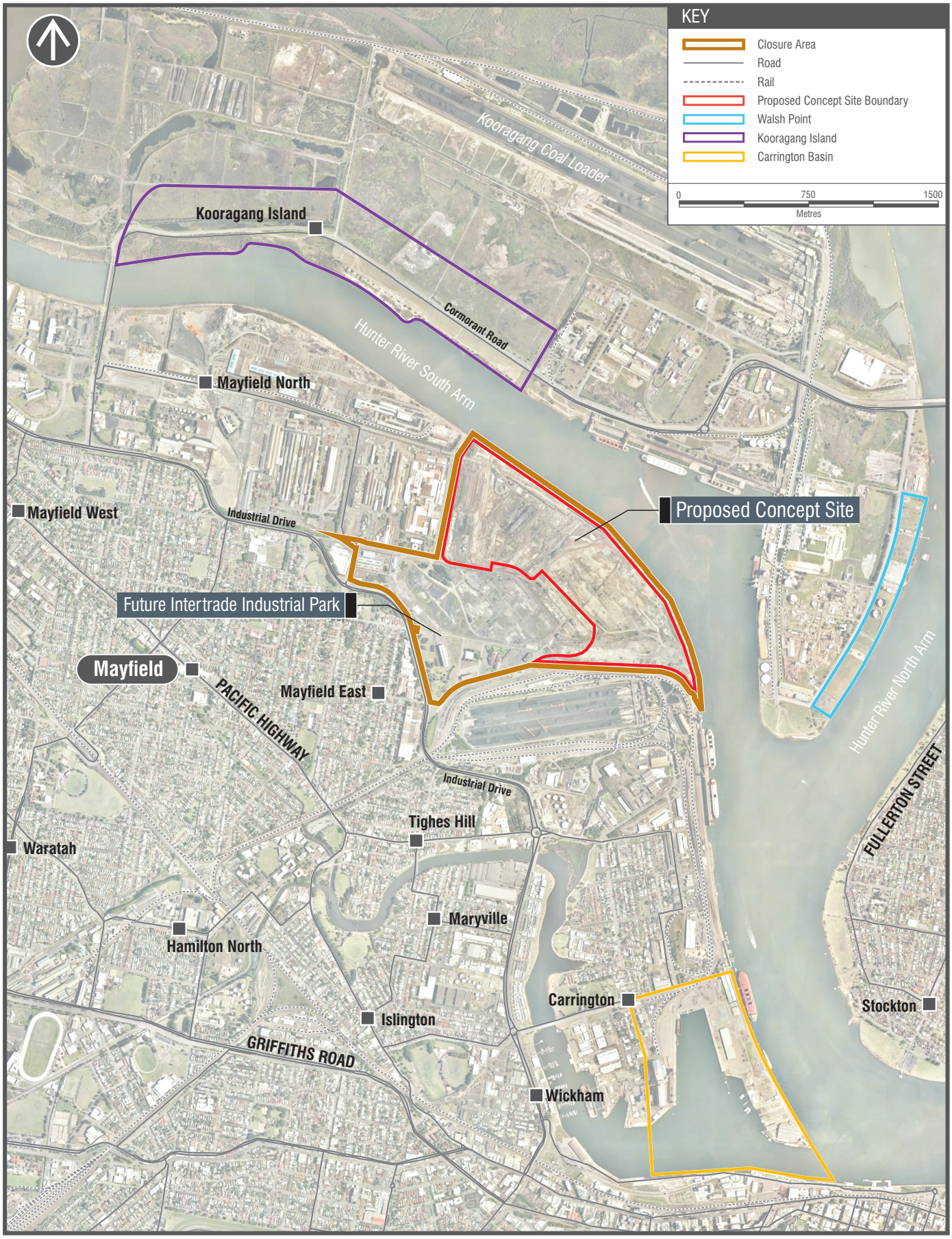
4.2 Alternative Port of Newcastle Sites

There are currently three alternative NPC-owned and operated sites within the Port of Newcastle, including Kooragang Island, Walsh Point and Carrington Basin (refer to **Figure 4-2**). Kooragang Island is the largest inland port area. It has long been earmarked for expansion of coal terminals and a large portion of the land area has been allocated to future coal terminals. Therefore, this site would not be suitable for development of a container terminal or for handling other types of bulk goods and general cargo.

NPC owns over 20 hectares of land between the ring road (Heron and Greenleaf Roads) and the shoreline around the perimeter of Walsh Point. This land does not have sufficient depth (distance from the shore to the road) to support container terminal activities. The existing berth facilities are largely occupied and the development of another berth would have a negative impact on the operational capacity of the existing channel. Berths on the eastern side of Walsh Point are not considered economic at this stage due to the amount of dredging required and maintenance of the dredged depths. Walsh Point does have sufficient area available for accommodating small to medium-sized facilities for importing and exporting bulk goods, bulk liquids and general cargo.

Carrington Basin has only small pockets of land which are available for development. It is better suited to smaller scale and temporary developments. In addition, there are draft limitations for vessels associated with the basin which would not meet forecast shipping requirements.

"This page has been left blank intentionally"



AECOM

ALTERNATIVE PORT OF NEWCASTLE SITES

Environmental Assessment

Mayfield Site Port-Related Activities Concept Plan

Figure 4-2

"This page has been left blank intentionally"

These three alternatives were eliminated from further consideration on the basis that there are no other NPC-owned and operated sites with sufficient vacant land and ready Port access (through road and rail infrastructure) available for accommodating what would become the State's next major container terminal. They are not considered to have suitable accommodating facilities for importing and exporting bulk goods and general cargo.

4.3 Multi Purpose Terminal Alternative

In 2001, the Minister for Planning granted development consent for remediation of the Closure Area and construction and operation of a MPT in an area within the proposed concept site. The MPT consisted of a Bulk Handling Terminal, Container Terminal and General Cargo Handling Facility (refer to **Figure 4-3**). In accordance with the 2001 consent, the MPT was to be developed in two stages following completion of the remediation works:

- **Stage 1.** Consisting of a Container Terminal with a maximum throughput of 350,000 TEU and a General Cargo Handling Facility with an assumed operational capacity of up to 500,000 tonnes per annum.
- **Stage 2.** Consisting of a Bulk Handling Terminal with an assumed operational capacity of up to 1,500,000 tonnes per annum.

As detailed in **Section 2.5.1** the majority of remediation works within the MPT footprint have been carried out in accordance with the 2001 consent, and with completion of the final remediation works scheduled to be completed in 2012 the site will soon be ready for large-scale development for port-related uses.

However, in the 10 years since the approved MPT concept design was developed the strategic policy direction for NSW Ports has evolved and the design has become dated. While NPC have recently completed construction of a general cargo handling facility known as Mayfield No.4 Berth at the site, the MPT design does not reflect current trade demand forecasts which have changed significantly since 2001 (refer to **Section 3.2**).

The original MPT design had an area of approximately 53 hectares compared to the 90 hectares now estimated to be required to accommodate the trade forecast over the next 25 years or more. The rail alignment has also changed in accordance with a modification under the 2001 consent and is now located to the south west of the original location shown as part of the MPT and therefore does not fit well with the original location for the container terminal. As a result of the change in trade demand, NPC's approach to development of the balance of the site evolved from the original MPT concept design into a concept which occupies a larger area and has five key land-based operational precincts (refer to **Section 4.4**).

4.4 Concept Alternative with Precincts

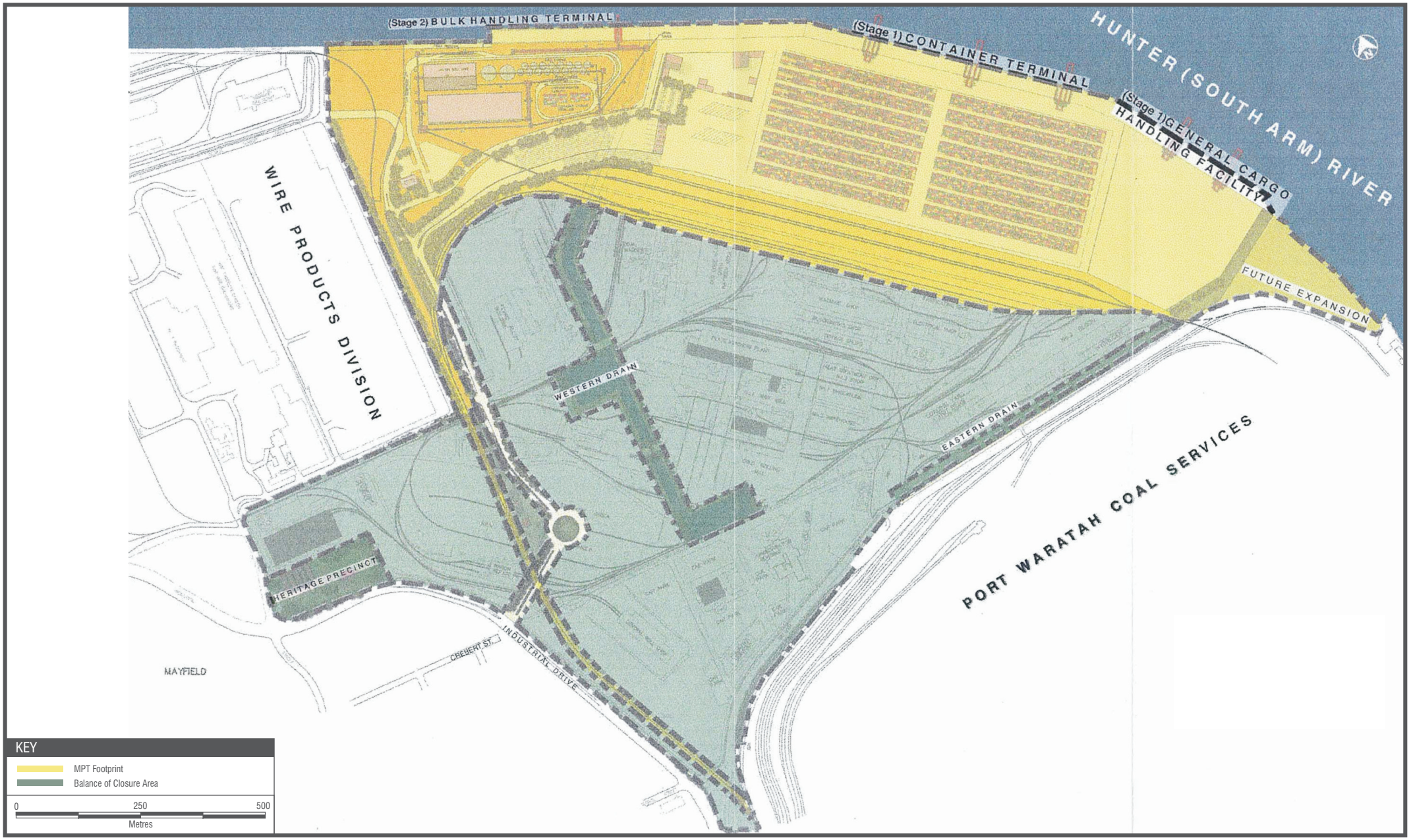
In order to respond to the most up-to-date trade needs forecast for the State, NPC developed a concept which has five key land-based operational precincts:

- NPC Operations Precinct from which NPC would manage Port of Newcastle operations.
- Bulk and General Precinct for handling non hazardous dry bulk products including grain, briquettes, and coke cargoes.
- General Purpose Precinct for handling and storing cargo containers, heavy machinery, Ro/Ro and break bulk cargo.
- Container Terminal Precinct for handling containers.
- Bulk Liquid Precinct for storing, blending and distributing high quality fuels.

There is also a Berth Precinct proposed along the foreshore of the South Arm of the Hunter River containing seven shipping berths for supporting the key land-based operational precincts. Provision of a Container Terminal Precinct, Bulk and General Precinct and General Purpose Precinct at the site is generally consistent with the original concept design for the MPT.

As discussed in detail in **Section 5.0** the boundaries between the five key land-based operational precincts are approximate and may shift slightly in the future to provide flexibility in accommodating future trade needs. However, the boundary of the whole site would not change.

"This page has been left blank intentionally"



AECOM

Note 1: Source - URS, ELE Architecture (10/08/2000)
Note 2: Refer to Mod-56-7-2008 regarding approved relocation of general cargo handling facility (21/11/2008) - Refer to Figure 2-1

MULTI PURPOSE TERMINAL ALTERNATIVE (2001 CONSENT)
Environmental Assessment
Mayfield Site Port-Related Activities Concept Plan

Figure 4-3

"This page has been left blank intentionally"

Development of the proposed concept required consideration of a range of Port planning issues, opportunities and constraints. Key considerations and constraints in this process, and how they influenced the proposed concept, are described as follows:

- **State Policies and Plans.** The aims and objectives of relevant State policies and plans including the *NSW State Plan*, *NSW Ports Growth Plan*, and the *State Infrastructure Policy* influenced the proposed concept. For example, the *Ports Growth Plan* aims to distribute the benefits of port growth more equitably between the Sydney, Hunter and Illawarra regions of NSW, provide long-term capacity for containers, bulk goods and general cargo, and enhance the economic efficiency of NSW ports. A core direction of the *Ports Growth Plan* is for the former BHP Steelworks site (within which the proposed concept site is located) to be secured for port use. The proposed concept would ensure the site is secured for port-related uses and has precincts dedicated to handling containers, bulk goods (dry and liquid) and general cargo.
- **Regional Policies and Plans.** The aims and objectives of regional policies and plans including the *Lower Hunter Regional Strategy* were considered in the development of the proposed concept. The *Lower Hunter Regional Strategy* aims 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".* Consistent with the *Lower Hunter Regional Strategy,* the proposed concept has a Container Terminal Precinct and General Purpose Precinct for handing containers.
- **Trade Forecast.** As detailed above and in **Section 3.2** the future trade forecast identifies a need provide long-term capacity at NSW ports for containers, bulk goods and general cargo. NPC used the future forecast of trade type and quantity to develop the proposed concept. In response to the need for increased capacity in NSW to handle containers, NPC developed the proposed concept with a Container Terminal Precinct of approximately 35 hectares that would be capable of handling 1 million TEU of containers per annum at final development. The proposed concept also has a 25-hectare General Purpose Precinct, of which a portion of the precinct would be dedicated to handing containers. NPC also developed the proposed concept based on trade forecast information collated through internal market research. Operators of bulk dry and bulk liquid fuel facilities have approached NPC and demonstrated a need for providing a Bulk and General Precinct for handling dry bulk goods such as feed grain, rice, canola, cement, and coal and for a Bulk Liquid Precinct for handling liquid fuels including unleaded petrol and biodiesel.
- **Dimensions of the Site**. The dimensions of the site were considered in determining the optimal location of the precincts. For example, the irregular parcel of land at the south eastern end of the site was an ideal location for the NPC Operations Precinct but unsuitable for the Container Terminal Precinct which ideally requires a regular square or rectangular shape and depth of approximately 400 metres for optimal operations involving container stacking, loading, and connections to the road and rail network.
- **Availability of Rail Infrastructure.** The Bulk and General, General Purpose and Container Terminal Precincts all require access to rail infrastructure. Rail infrastructure is available at the site, and, the provision of rail sidings within these three precincts would be required. The central portion of the site is best suited to the provision of rail sidings which require long, straight areas of land and therefore this was an important consideration in citing the three precincts in the centre of the site that would utilise rail.
- **Land Use Within and Surrounding the Site**. Existing land use within and surrounding the site, including the location of the IIP to the west, nearby residential areas to the south west, and existing development which has occurred in accordance with the 2001 consent were important considerations in determining the precinct layout. For example, the boundary of the General Purpose Precinct was selected to align with the existing general cargo handling facility known as Mayfield No. 4 Berth which was approved under the 2001 consent.
- **Interaction between Precincts.** The interaction between precincts was assessed in the Preliminary Hazard Analysis (PHA) study, including the potential for accumulation of risk, which is an important factor in ensuring overall risk profile of the area is controlled. The assessment identified that the precinct design would allow the location of Dangerous Goods storage areas such that there would be sufficient separation so that incidents in a storage areas would not result in impact to another storage area in an adjacent precinct.
- **Needs of Potential Future Operators.** The needs of potential future operators were considered. NPC liaised with potential operators of terminal facilities regarding their operational requirements.

4.5 Do Nothing Alternative

The 'do nothing' alternative would involve maintaining the status quo at the site, which includes operation of the general cargo handling facility (Mayfield No. 4 Berth) and operation of the Koppers berth (Ex-BHP No. 6 Berth) and pipeline. Proceeding with the 'do nothing' alternative would be a wasted opportunity to fully utilise prime industrial land for port-related activities. It would place additional pressure on other NSW ports to handle anticipated growth in trade and would not be consistent with the role of the Port of Newcastle as one of three ports needed to handle the growth in container freight demand as defined in the NSW *Ports Growth Plan*.

4.6 Alternative Approval Mechanisms

Part 3A of the *EP&A Act* allows a proponent to request the Minister for Planning consider providing Concept and/or Project Approvals related to development declared by the Minister to be a Major Project. Project Approval is the most common form of approval sought by a proponent. It allows the proponent to undertake the development in accordance with conditions issued as part of the Project Approval. Where a proponent chooses to seek Concept Approval, the approval is often accompanied by a concurrent Project Approval application. Concept Approvals of this nature are usually sought for large or complex sites where a catalyst project or stages of a project have been identified. In these circumstances, the Concept Approval provides for the consideration of the role of the whole site into the future, while enabling the pending project or stage of a project requiring Project Approval to proceed.

NPC has chosen not to pursue a Project Approval or to obtain a concurrent Concept and Project Approval. This is because NPC has identified the need to plan the future role of the site at a broad scale and understand the overall potential environmental impacts of developing the proposed concept before considering individual projects. This approach aims to provide certainty for all stakeholders, including government agencies, the local community and potential developers that the site is suitable for the intended port-related uses and that potential environmental impacts can be minimised and managed to acceptable levels.

This approach also provides the necessary flexibility to accommodate changes in port planning and trade demand over the 25 year plus lifetime of the proposed concept. NPC is seeking a lead developer or developers to partner and invest in the development of the majority of the site for port-related activities. NPC is in the process of inviting detailed proposals from potential future developers for projects which would be consistent with the proposed concept.

A Concept Approval was selected as the preferred approval process. A Concept Approval would set the broad parameters and environmental management framework within which subsequent Project Approvals would be required to fit. Concept Approval would give subsequent developers the confidence and level of certainty required to invest in development of the land for port-related activities and it would also assist in streamlining the subsequent Project Approval process.

4.7 Conclusion

The Concept Approval was selected as the appropriate approval mechanism because it establishes the strategic framework for development of the site to reach peak operations by 2034 and would provide certainty for all stakeholders, including government agencies, the local community and potential developers that the site is suitable for the intended port-related uses and that potential environmental impacts can be minimised and managed to acceptable levels. Insufficient detail is available at this point of time to support Project applications. NPC is currently inviting proposals from developers interested in future development of the site in a manner which is generally consistent with the proposed concept.

The alternative of developing other existing ports was eliminated on the basis that the *NSW Ports Growth Plan* relies on a strategy of the three NSW ports (the Port of Newcastle, Port of Port Kembla, and Port Botany) combined to meet this need. Owing to the substantial investment required in port and ancillary infrastructure, the potentially significant environmental impacts of developing a new port, and the fact that fewer ports of call are preferred by the shipping industry, the alternative of developing a new port was eliminated.

Development of alternative sites within the Port of Newcastle was also eliminated as an option because there are no other NPC-owned and operated sites with sufficient vacant land and ready Port access available for handling containers and large-scale bulk and general cargo.

Development of the original MPT alternative was eliminated on the basis that the design is outdated and would not meet future port needs. The 'do nothing' alternative was also eliminated.

Development of the proposed concept with five key land-based operational precincts and a Berth Precinct was selected by NPC as the preferred alternative. A detailed description of the proposed concept is provided in **Section 5.0**.

"This page has been left blank intentionally"