ASSESSMENT REPORT

Department of
Urban Affairs and Planning

REPORT ON THE ASSESSMENT OF A DEVELOPMENT APPLICATION PURSUANT TO SECTION 80 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

1 SUMMARY

BHP Ltd (the applicant), proposes to construct and operate a Multi-Purpose Terminal (MPT) in the Closure Area of the BHP Steelworks Main Site, Newcastle. The development will involve the remediation of the entire Closure Area, including the demolition and removal of structures, and the construction and operation of a Multi-Purpose Terminal in a 53.1 hectare section of the Closure Area, adjacent to the Hunter River.

The Development Application (DA) was submitted as a staged development under section 80(4) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Stage 1 comprises site remediation of the entire Closure Area, construction and operation of a Container Terminal and General Cargo Handling Facility and associated dredging of the South Arm of the Hunter River. Stage 2 will comprise the construction and operation of a Bulk Handling Terminal and associated dredging.

This report represents the Department's environmental assessment of Stage 1 of the proposal. Stage 2 has been deferred by the applicant, and will be subject to further environmental impact assessment. A separate assessment report for Stage 2 will be prepared by the Department at the appropriate time for determination by the Minister.

Under the EP&A Act, the proposed development is classified as State Significant, Integrated and Designated development. The Minister for Urban Affairs and Planning is the consent authority for the Development Application.

The Development Application and supporting Environmental Impact Statement (EIS) were publicly exhibited from 3 October until 14 November 2000. A total of 18 submissions were received; eight from government agencies, one from Newcastle City Council and nine submissions from the public. The submissions were primarily concerned with heritage, traffic, noise, the adequacy of proposed remediation techniques, and social impacts.

The EPA, NSW Waterways Authority and the Roads and Traffic Authority have subsequently granted General Terms of Approval for the development.

The Department has assessed the Development Application, the EIS and the submissions on the proposed development, and recommends that the Minister approve the Development Application, subject to the imposition of certain conditions.

2 SITE CONTEXT

2.1 SITE

The land to which the DA relates is Lot 221, DP 1013964, also known as the Closure Area within BHP Newcastle Steelworks Main Site. The Closure Area is located approximately four kilometres north west of Newcastle CBD and has a total area of approximately 150 ha. Figure 1 on the following page shows the location of the BHP Main site within the Newcastle metropolitan area.

The Closure Area comprises land which was once used for iron and steel making operations and associated activities. The MPT would occupy the northern and eastern extent of the Closure Area. Figure 2 shows the layout of the Steelworks site, the location of the Closure Area and MPT footprint.

2.2 SURROUNDING LAND USES

The Closure Area is bounded by the South Arm of the Hunter River to the north, the One Steel Wire Products facility to the west, Industrial Drive and Mayfield East residential/commercial areas to the south and the Port Waratah Coal Loader and Selwyn Street to the east.

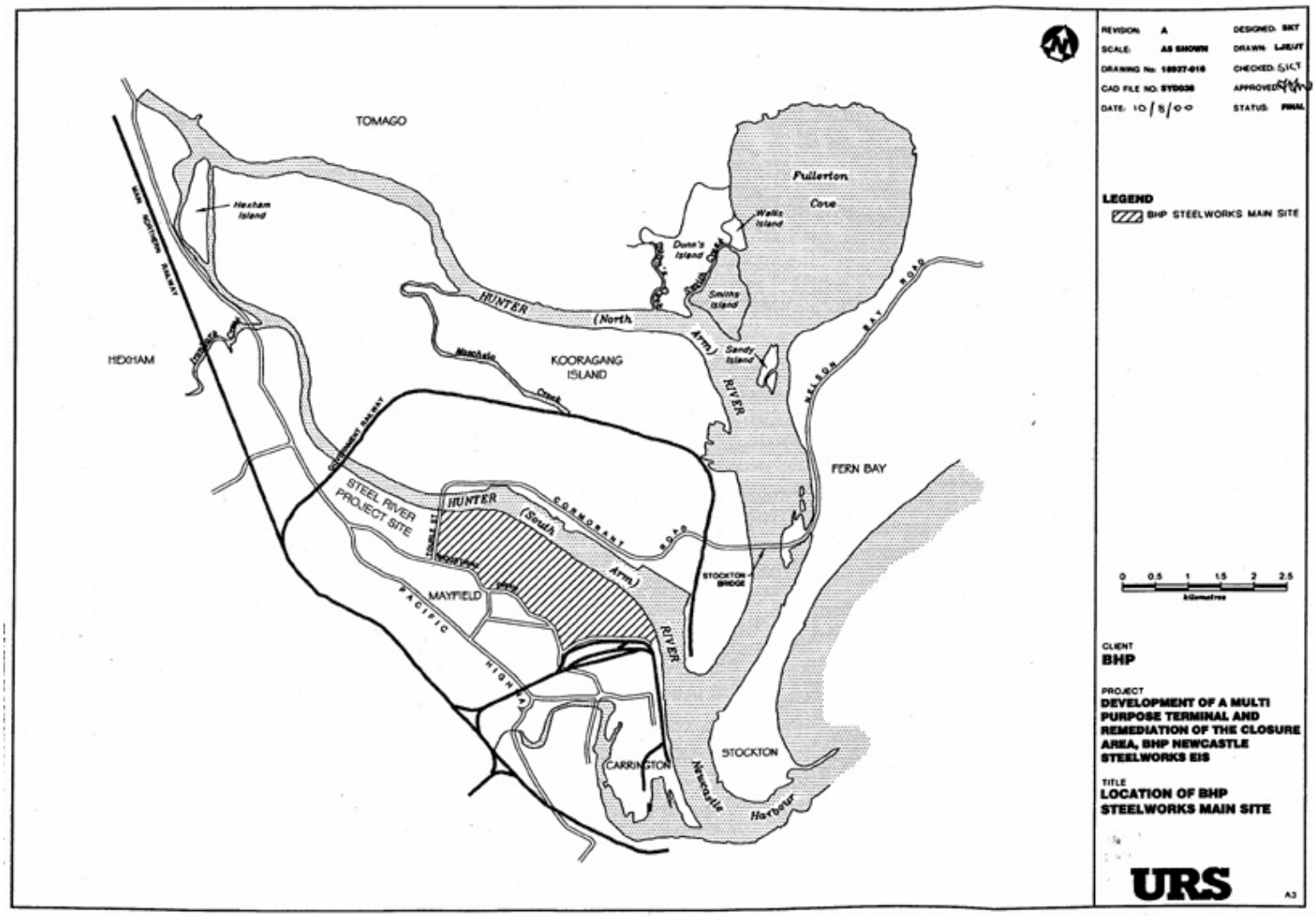
TOMAGO
Hexham Island
Fullerton Cove
Wells Island
Dora's Island
Smiths Island
HUNTER (North Arm) RIVER
KOORAGANG ISLAND
Sandy Island
NELSON BAY ROAD
FERN BAY
HEXHAM
STEEL RIVER PROJECT SITE
HUNTER (South Arm) RIVER
CORMORANT ROAD
STOCKTON BRIDGE
MAYFIELD
PACIFIC HIGHWAY
CARRINGTON
STOCKTON
Newcastle Harbour
REVISION: A
DESIGNED: SKT
SCALE: AS SHOWN
DRAWN: LJR/JT
DRAWING No: 18527-016
CHECKED: SKT
CAD FILE NO: SYD036
APPROVED:
DATE: 10/5/00
STATUS: FINAL
LEGEND
BHP STEELWORKS MAIN SITE
0 0.5 1 1.5 2 2.5
CLIENT
BHP
PROJECT
DEVELOPMENT OF A MULTI PURPOSE TERMINAL AND REMEDIATION OF THE CLOSURE AREA, BHP NEWCASTLE STEELWORKS EIS
TITLE
LOCATION OF BHP STEELWORKS MAIN SITE
URS
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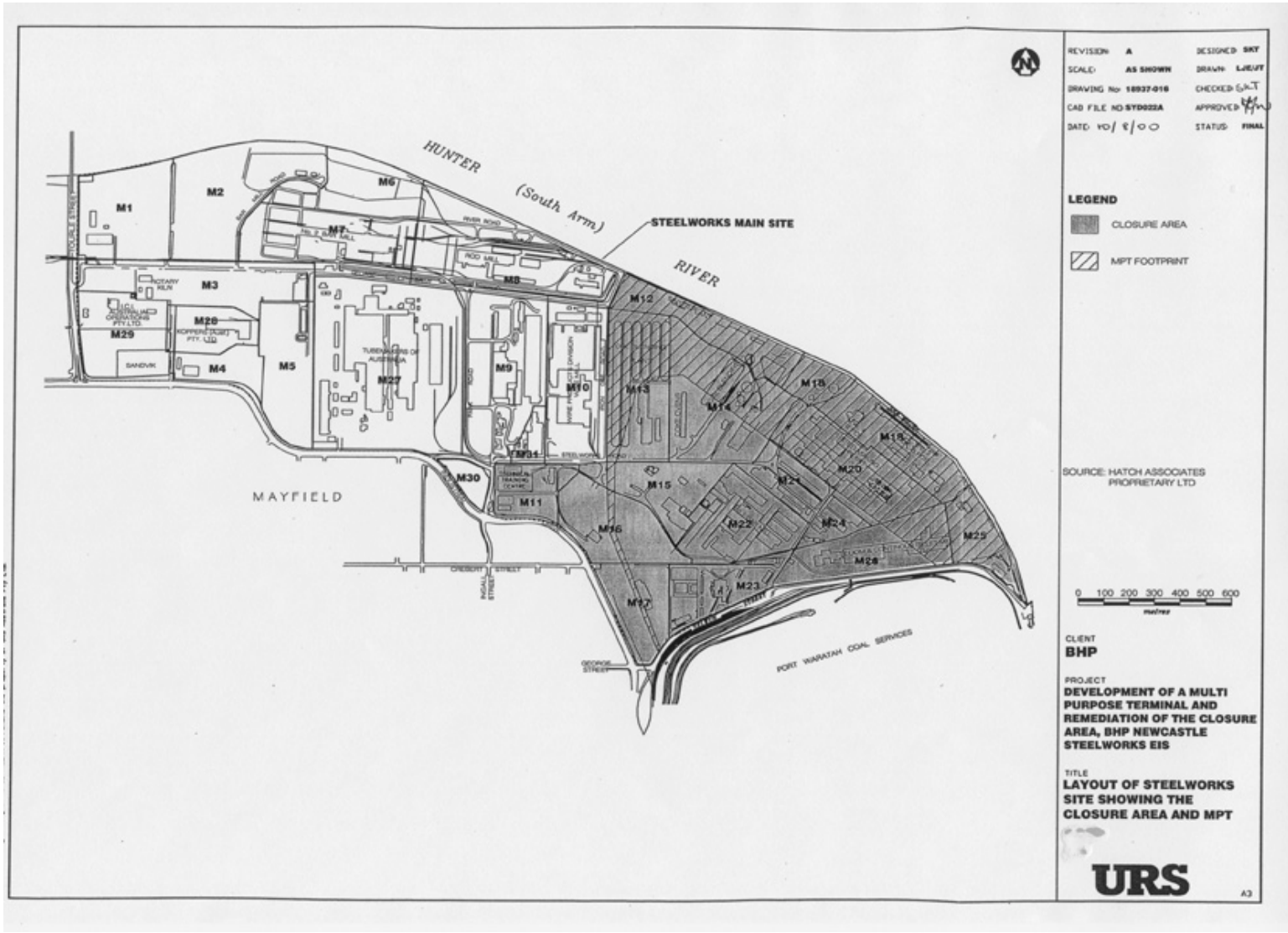
Figure 1


HUNTER
(South Arm)
RIVER
STEELWORKS MAIN SITE
MAYFIELD
PORT WARATAH COAL SERVICES
M1
M2
M3
M4
M5
M6
M7
M8
M9
M10
M11
M12
M13
M14
M15
M16
M17
M18
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M21
M22
M23
M24
M25
M26
M27
M29
M30
M31
REVISION A
SCALE AS SHOWN
DRAWING No 18937-016
CAD FILE NO STD022A
DATE 10/8/00
DESIGNED SKT
DRAWN LJE/JT
CHECKED SKT
APPROVED
STATUS FINAL
LEGEND
CLOSURE AREA
MPT FOOTPRINT
SOURCE: HATCH ASSOCIATES PROPRIETARY LTD
0 100 200 300 400 500 600
metres
CLIENT
BHP
PROJECT
DEVELOPMENT OF A MULTI PURPOSE TERMINAL AND REMEDIATION OF THE CLOSURE AREA, BHP NEWCASTLE STEELWORKS EIS
TITLE
LAYOUT OF STEELWORKS SITE SHOWING THE CLOSURE AREA AND MPT
URS
A3

Figure 2

3 THE PROPOSED DEVELOPMENT

A full description of Stage 1 of the development is contained in Section 6 of the EIS. A summary is provided below.

3.1 OUTLINE OF THE PROPOSAL

The proposal will involve the remediation of the entire Closure Area, the demolition of structures within the MPT footprint, and the construction of the MPT, which will include a Container Terminal, a General Cargo Handling Facility and a Bulk Handling Terminal. The development also includes associated road and railway infrastructure and dredging of the Hunter River. Future development within the remainder of the Closure Area, which does not fall within the MPT footprint, will be subject to future industrial development proposals which are yet to be determined and do not form part of the application for which consent is sought.

The Development Application was submitted as a staged development under section 80(4) of the EP&A Act. Stage 1 comprises site remediation of the entire Closure Area, construction and operation of the Container Terminal and General Cargo Handling Facility and associated dredging. Stage 2 will comprise the construction and operation of a Bulk Handling Terminal and associated dredging.

This report represents the Department's environmental assessment of Stage 1 of the proposal. Stage 2 has been deferred by the applicant, and will be subject to further environmental impact assessment. A separate assessment report for Stage 2 will be produced by the Department at the appropriate time for determination by the Minister.

3.2 SITE PREPARATION, REMEDIATION AND DREDGING

3.2.1 Site Preparation

Preparation activities would involve the demolition and removal of all remaining structures within the MPT footprint, in order to enable remediation and redevelopment. A combination of three demolition methods is proposed, incorporating heavy machinery demolition, controlled collapse, and dismantling of structures.

Site remediation and construction of the Stage 1 component of the MPT would necessitate the demolition of the following structures, listed as items of heritage significance under Newcastle LEP 1987:

- Remnant No. 1 Blast Furnace;
- No. 1 Blower House;
- Open Hearth Building;
- No. 1 Bloom and Rail Mill;

- Steel Foundry;
- DC Substation;
- Wharves (in part);
- No. 3 Blast Furnace;
- AC Pump House;
- Power House;
- Open Hearth Changing House;
- Mould Conditioning Building;
- BOS Plant; and
- No. 4 Blast Furnace.

Development consent for the demolition of a number of non-heritage structures both inside and outside the MPT footprint has already been granted by Newcastle City Council. These approvals are not considered to be inconsistent with the subject Development Application.

3.2.2 Site Remediation

Numerous site assessments have been undertaken at the Steelworks Main Site. The findings of these assessments indicate that polycyclic aromatic hydrocarbons (PAHs) are present in the surface fill material in sufficiently high concentrations to warrant remediation.

The remediation strategy for the Closure Area would involve recontouring of the site, and the establishment of a hard pavement or coal washery reject (CWR) cap over the surface of the Closure Area. Recontouring and capping would address the health risk and landform issues associated with the site through providing a physical barrier, minimising the potential for human contact with contaminated materials and through improving surface water drainage, minimising flooding and reducing infiltration to the underlying shallow groundwater table.

The CWR and hard pavement cap would be placed in a staged manner according to site redevelopment options for individual parcels, and stormwater management requirements.

3.2.3 Dredging

Stage 1 of the MPT, would require construction of a wharf face approximately 950m long. The new wharf, comprising three berths for the Container Terminal and General Cargo Handling Facility (berths 350m, 300m, and 300m in length) would replace the existing BHP berths No. 1 to No. 6.

Dredging of the existing berthing basin within the South Arm of the Hunter River would be required to produce adequate clearance for post-Panamax class and other ships. It is estimated that in order to achieve the desired design dredge depth of 15 m in the dredge area, approximately 324,000 m^3 of sediment and rock would need to be removed in the Stage 1 works. The extent of the dredging required is shown in Figure 3.

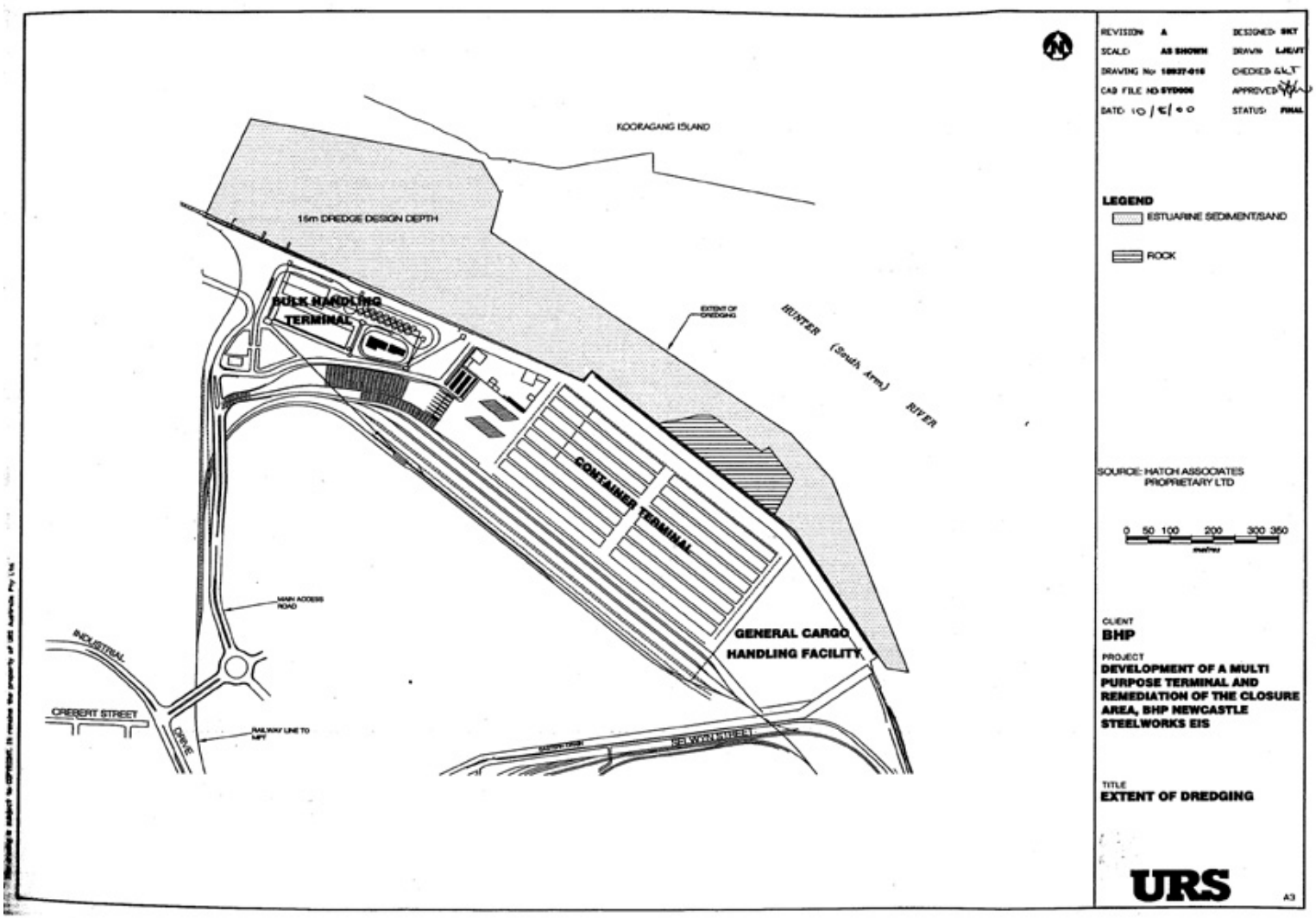

KOORAGANG ISLAND
15m DREDGE DESIGN DEPTH
BULK HANDLING TERMINAL
EXTENT OF DREDGING
HUNTER (South Arm) RIVER
CONTAINER TERMINAL
GENERAL CARGO HANDLING FACILITY
MAIN ACCESS ROAD
INDUSTRIAL
CREERT STREET
CIRCLE
RAILWAY LINE TO MPT
REVISION A
DESIGNED SKT
SCALE AS SHOWN
DRAWN LAE/VT
DRAWING No: 18927-016
CHECKED GLT
CAD FILE NO: SYD006
APPROVED
DATE: 10/8/00
STATUS: FINAL
LEGEND
ESTUARINE SEDIMENT/SAND
ROCK
SOURCE: HATCH ASSOCIATES PROPRIETARY LTD
0 50 100 200 300 350
CLIENT
BHP
PROJECT
DEVELOPMENT OF A MULTI PURPOSE TERMINAL AND REMEDIATION OF THE CLOSURE AREA, BHP NEWCASTLE STEELWORKS EIS
TITLE
EXTENT OF DREDGING
URS
A3

Figure 3

The spoil from the dredging would be pumped to settling basins or a clean sand stockpile on Kooragang Island, within the BHP Kooragang Island Landfill. The EPA currently licences this facility as a non-putrescible solid waste (class 2) landfill. The settling basins would first serve as treatment ponds to dewater the liquid waste, and would subsequently serve as disposal cells for the non-liquid waste once dewatered.

3.3 CONSTRUCTION AND OPERATION OF THE MPT

3.3.1 Container Terminal

Construction of the Container Terminal would commence following remediation of the MPT footprint. The following structures and facilities would be constructed or installed:

- Pavements/ container storage and handling area;
- Administration building;
- Vehicle entry/exit driveway booths;
- Visitor and staff car park;
- Workshop;
- Fuel depot;
- Quarantine/Customs area;
- Tractor/Trailer marshalling area;
- Access road and internal road network;
- Container stacking area;
- Reefer area (refrigeration);
- Railway facility (sidings), connecting from the existing Morandoo sidings inroad;
- Wharves, consisting of two 300m long northern berths to serve the container terminal and a 350m long southern berth to serve both the container terminal as well as the general cargo handling facility;
- Services infrastructure, including water, sewerage, wastewater collection facilities, waste collection facilities, electricity connections, communications connections;
- Stormwater Management System;
- Security fencing and lights;
- Fire fighting system.

3.3.2 General Cargo Handling Facility

Facilities to handle general cargo would be provided on the portion of the MPT to the east of the Container Terminal and would occupy an area of approximately 7 ha. Construction of the General Cargo Handling Facility would generally involve grading and profiling of the pre-levelled site to achieve the desired pavement and drainage falls. Following site preparation the following structures and facilities would be constructed or installed:

- Stockpile area;
- Internal road network;

- Security fencing and lighting;
- Services infrastructure and surface water drainage.

3.3.3 Hours of Operation

The Container Terminal and General Cargo Handling Facility would operate 24 hours a day on a cycle of three shifts. Rail loading/unloading would be carried out during two shifts per day, depending upon volumes.

3.4 EMPLOYMENT AND CAPITAL INVESTMENT

The proposal is expected to have a capital expenditure of approximately $300 million. It is estimated that the proposal will create 350 direct jobs, and an additional 3000 indirect construction and operational employment opportunities.

3.5 REASONS FOR THE PROPOSAL

Closure of the iron and steel making component of the BHP Steelworks Main Site occurred in September 1999. The Closure Area provides a valuable asset to the applicant as it offers considerable potential for industrial (light to heavy), commercial (including high technology and business park concepts) and port related development.

The Applicant has identified the potential to develop a niche port offering competitive container handling services at economically viable rates.

4 STATUTORY PLANNING FRAMEWORK

4.1 PERMISSIBILITY

The subject site is within land zoned 4(b) (General Industrial Zone), under Newcastle Local Environmental Plan (1987), and is permissible with development consent. The Department considers that the proposal is generally consistent with the provisions of this LEP. Newcastle City Council is currently preparing a draft local environmental plan for the City to replace LEP 1987. The subject site

4.2 MINISTER'S ROLE

The proposed development is State Significant Development. Therefore the Minister for Urban Affairs and Planning is the consent authority.

4.3 LEGISLATIVE CONTEXT

4.3.1 Environmental Planning and Assessment Act 1979

State Significant Development

On the 9th July 1999, in accordance with section 76A(7)(b)(iii) of the EP&A Act, by notice in the Gazette, the Minister for Urban Affairs and Planning declared the proposed development to be State significant. This declaration was made on the basis that the proposal is likely to have a significant beneficial impact on the economy of Newcastle and the surrounding region, creating 350 direct jobs, and a further 3000 indirect jobs, with an estimated capital expenditure of approximately $300 million.

Integrated Development

The proposal is integrated development. In addition to development consent, approvals are required from:

- The Environment Protection Authority under Section 48 of the *Protection of the Environment Operations Act 1997*;
- The Roads and Traffic Authority under Section 138 of the *Roads Act 1993*; and
- NSW Waterways Authority under Part 3A of *the Rivers and Foreshores Improvement Act 1948*.

The above agencies have provided General Terms of Approval (GTA) for the development proposal.

Designated development

The proposed development is designated development, being classified as both a shipping facility, and a contaminated soil treatment works, as defined in

Schedule 3 of the *Environmental Planning and Assessment Regulation 1994*. Under the provisions of section 78A(8) of the EP&A Act, an EIS must be prepared to accompany a Development Application in respect of designated development.

4.4 RELEVANT PLANNING INSTRUMENTS

4.4.1 State Environmental Planning Policies

The relevant State Environmental Planning Policies applying to the development proposal are:

- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development (SEPP 33);
- State Environmental Planning Policy No. 34 – Major Employment Generating Industrial Development (SEPP 34); and
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55).

The Department considers that the development proposal is generally consistent with the provisions of these State Environmental Planning Policies. A detailed assessment of the proposal against their requirements is contained in the Section 79(C) consideration in Appendix A.

4.4.2 Regional Environmental Plans

The only relevant Regional Environmental Plans applying to the development proposal is the Hunter Regional Environmental Plan 1989. The Department considers that the development proposal is generally consistent with the aims and objectives of this REP. An assessment of the proposal against the requirements of relevant regional planning instruments is contained in the Section 79(C) consideration in Appendix A.

4.4.3 Local Environmental Plans

The relevant Local Environmental Plans applying to the development proposal are:

- Newcastle Local Environmental Plan 1987;
- Draft Newcastle Local Environmental Plan 2000.

The Department considers that the development proposal is generally consistent with the aims and objectives of these LEPs. An assessment of the proposal against the requirements of relevant local planning instruments is contained in the Section 79(C) consideration in Appendix A.

5 CONSULTATION

5.1 DATE OF DA LODGEMENT

The DA and EIS were registered by the Department of Urban Affairs and Planning on 5 September 2000.

5.2 EXHIBITION DATES AND VENUES

Public exhibition of the DA and supporting documents took place for a period of six weeks between 3 October and 14 November 2000. The DA and EIS were exhibited at the Department's Information Centre in Sydney, the Department's Newcastle Office, Newcastle City Council, the Nature Conservation Council of NSW, and Mayfield Library.

5.3 NOTIFICATION

Advertisements were placed in the Sydney Morning Herald and the Newcastle Herald. All landowners and occupiers considered by the Department to be potentially affected by the proposed development were notified by mail regarding the public exhibition dates, locations, and the Department's contact officer. In addition, a number of signs displaying the details of the DA were placed on site during the public exhibition period.

5.4 SUBMISSIONS RECEIVED

A summary of all submissions received is attached as Appendix B.

5.4.1 Community Submissions

A total of nine submissions were received from the community. The issues raised in relation to the proposed development were:

- noise impacts;
- traffic Impacts;
- heritage significance of the Steelworks;
- impacts on flora and fauna, in particular the Green and Golden Bell Frog;
- socio-economic benefits of the proposal; and
- the adequacy of proposed site remediation activities.

These issues are discussed further in Section 6 of this report. A summary of submissions is included as Appendix B of this report.

5.4.2 Agency Submissions

Submissions were received from Newcastle City Council, Rail Access Corporation, the National Parks and Wildlife Service, the Roads and Traffic Authority, NSW Heritage Office, the Mine Subsidence Board, Hunter Water

Corporation, NSW Fisheries, NSW Waterways Authority and the Environment Protection Authority.

The key issues raised in these submissions were:

- Soil and groundwater contamination and proposed remediation measures;
- the heritage significance of the site and proposed demolition and heritage interpretation;
- noise impacts associated with operations;
- dredge sediment disposal on Kooragang Island and potential impacts on Green and Golden Bell Frog populations;
- Dredging of the Hunter River;
- Proposed road access arrangements; and
- Flood and stormwater management.

These issues are discussed further in Section 6 of this report.

6 CONSIDERATION OF KEY ISSUES

6.1 TRAFFIC AND TRANSPORTATION

Section 16 of the EIS considers the potential traffic and transportation impacts resulting from the proposal.

6.1.1 Road Vehicle Movements

Site Preparation and Remediation

Site preparation and remediation activities are proposed to be carried out in a phased manner as future development of the Closure Area proceeds. Therefore traffic generation is likely to be sporadic and traffic generation will depend on the size and nature of future development parcels and the type of remediation being undertaken. Notwithstanding this, the EIS (Table 6.1) provides a summary of the predicted traffic movements associated with this phase and predicts that the peak traffic movement would be 274 movements per day, of which 82 would be heavy vehicle movements associated with the import of capping material, and removal of demolition material and asbestos material. The Applicant however predicts that the average traffic generation during this phase will be approximately 100 vehicle movements per day, of which 42 would be heavy vehicles.

The access and egress for the site during remediation will depend on the staging of future development. Access would initially be via the existing Selwyn Street /George street intersection with Industrial Drive. Remediation during later stages of the development would access via the proposed new access road (discussed in Section 6.1.2 below).

Construction

Traffic generated during construction of Stage 1 of the proposal would stem from three main sources; site personnel, the importation of construction materials, and the importation of heavy equipment. The EIS estimates that these three sources combined would lead to a total maximum of 726 movements per day.

Table 6.2 Traffic Movement Summary – Construction

Activity	Daily Movements
Personnel – construction	666
Delivery trucks	60
Total	**726**

During construction, access to the site would be via the existing Selywn Street/George Street intersection with Industrial Drive.

Operation

Traffic generated during operation would stem from:

- Site personnel – it is estimated that the workforce would generate approximately 534 vehicle movements per day;
- Container Terminal – Table 6.3 provides a summary of the traffic volumes predicted to be generated by the transportation of containers from the Container Terminal;
- General Cargo Handling Facility – Table 6.3 provides a summary of the traffic volumes predicted to be generated by the General Cargo Handling Facility;

Table 6.3 Daily Truck Movements – Container Terminal and General Cargo Handling Facility

Year	Number of Truck movements/day		
	Container Terminal		General Cargo Handling Facility
	100% B Double	90% Six Axle 10% B Double	
2002/3	42	76	20
2003/4	104	156	50
2004/5	154	226	70
2005/6	218	406	100

The EIS estimates that traffic movements generated during the operation of the MPT would result in an increase of between 2 – 3.5% in daily traffic volume. Traffic from the MPT would result in slight increases along the New England and Pacific Highways and a significant increase in the number of heavy goods vehicles using the main arterial road network surrounding the MPT. An assessment of the performance of the road network, likely to be impacted on by the development, indicates sufficient spare capacity such that the level of service would not be significantly affected.

Consideration

Both the Roads and Traffic Authority (RTA), and Newcastle City Council (NCC) expressed in principle support for the proposal, and did not raise concern regarding the potential impacts on the existing road network. However, these agencies did express concern regarding the proposed access arrangements. These concerns are addressed in Section 6.1.2 of this report. A number of public submissions expressed concern about the potential noise emissions from road traffic. These concerns are addressed in Section 6.11 of this report.

Newcastle City Council commented on the lack of detail in the EIS regarding the roads and associated facilities to be constructed, particularly in terms of proposed pavement types and thickness, stating that it was unable to rationalise the lower recommended pavement thickness for the main access road. In response to these concerns, BHP stated that the EIS presented a

concept design for the roads within the MPT. It was also stated that the main access road to the MPT would be dedicated as a public road and would therefore be constructed to Council's standard specifications.

The Department has considered the concerns of Council regarding details for the construction of internal roads, and has included in the recommended conditions of consent, the requirement that the applicant construct the internal road network to Council specifications.

Council also suggested that traffic routes for goods vehicles used to transport material to and from the site should be limited to specific haulage routes to prevent heavy vehicles using local streets. Given that the site will have direct access to the arterial road network, it is unlikely that impacts on local streets would be experienced. Notwithstanding this the Department has included provisions in the recommended conditions of consent to for a Heavy Vehicle Route Plan to be prepared in consultation with Council showing proposed routes, for the approval of the Director-General.

The EIS proposes a number of environmental safeguards designed to alleviate potential traffic impacts including speed limits on internal roads, signposting, maintenance programs and driver education.

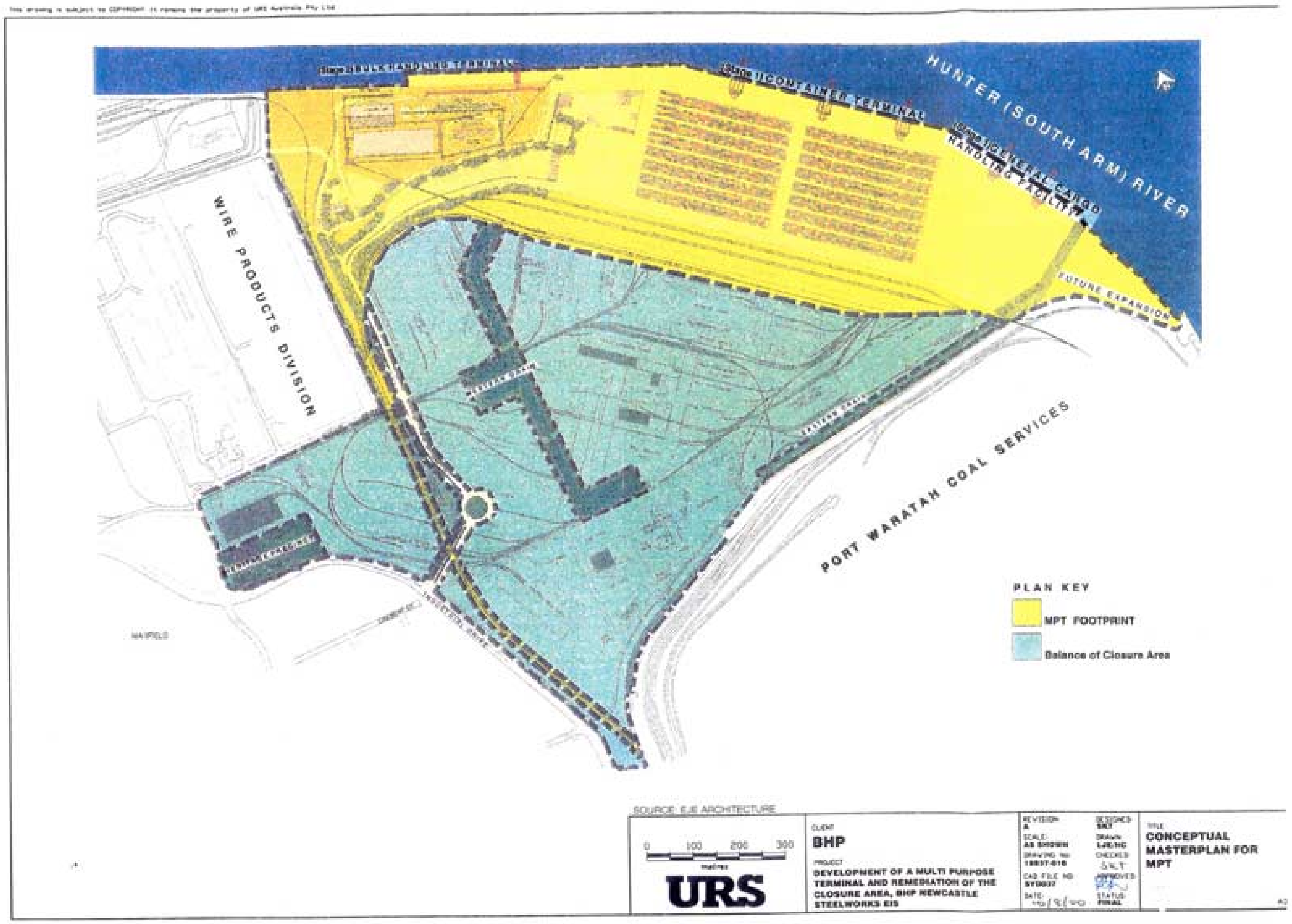
Conclusion

Given the improved access arrangements for the proposal (see Section 6.2), and that traffic will generated at the site will connect directly to the arterial road network and not utilise local roads, the Department is satisfied that impacts relating to road vehicle movements are acceptable, and the existing road network can accommodate traffic generated by the proposal.

The Department endorses the environmental safeguards as outlined in the EIS, and has incorporated a number of conditions into the recommended conditions of consent to manage the impacts related to road vehicle movements, including the preparation of a Traffic Management Plan (TMP).

6.1.2 Road Access

The EIS proposed that access to the MPT and the remainder of the Closure Area would be via a new signalised intersection to be constructed on Industrial Drive (opposite Crebert Street). The road would pass over the access railway line leading to the Closure Area, and a roundabout would be located about 150 m from Industrial Drive. From the roundabout, the road would lead in a northerly direction to the entrance of the MPT. The proposed access road arrangement is shown in Figure 4.


HUNTER (SOUTH ARM) RIVER
CONTAINER TERMINAL
GENERAL CARGO HANDLING FACILITY
FUTURE EXPANSION
WIRE PRODUCTS DIVISION
PORT WARATAH COAL SERVICES
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REVISION A
SCALE AS SHOWN
STATUS FINAL
TITLE
CONCEPTUAL MASTERPLAN FOR MPT

Figure 4

Consideration

In its submissions during the exhibition of the DA, the Roads and Traffic Authority (RTA), although expressing support for the proposal in principle, raised concern about the proposed access arrangements as outlined in the EIS. The RTA expressed a preference for access to the site to be via the existing intersections and that it would only permit a new access to Main Road 316 (Industrial Drive) if the existing intersection of George Street was removed and redesigned to allow left-in, left-out for George Street south of Main Road 316. The RTA also raised concerns regarding the need for an access strategy and internal road network for the Closure Area. These concerns were also shared by the City Council.

The Department forwarded these issues to BHP for response. A meeting was subsequently held between the Applicant and the RTA to reach agreement on the access arrangements for the site. BHP presented a number of reasons why it favoured the establishment of a new access point on Industrial Drive opposite Crebert Street, including the proximity of the Selwyn Street access point to the proposed railway line and potential cumulative noise impacts, and the fact that a change in company ownership had affected the use of the Bull Street/Ingall Street access point.

It was ultimately agreed between the RTA and BHP that a new intersection be constructed on Industrial Drive in the vicinity of Crebert Street and that the traffic signals be removed from the George Street/Selwyn Street intersection. However the RTA advised that the details of the new traffic arrangements, such as the treatment of left and right turn movements from and into George Street, needed further negotiation. The RTA also advised that the change in arrangements at George and Crebert Streets needed to be resolved to the satisfaction of Newcastle City Council, and that the local community should be consulted with respect to the proposed changes.

Based on advice from the RTA, the Department is satisfied that the revised access arrangements for the proposed MPT are adequate. The RTA has provided the Department with GTAs for the proposal, and these have been incorporated into the recommended conditions of consent. These GTA include measures to ensure the roads are designed and constructed to the satisfaction of the RTA.

6.1.3 Rail Movements

Rail movements generated during Stage 1 operations would stem from transportation of containers and general cargo from MPT facility. Its is proposed to construct a new rail line connecting the MPT with the existing Morandoo sidings inroad to the southwest of the MPT site. The new line would form a new through track to the BHP rolling mills. Three lines would branch off this track to service the MPT and connect (via one track) to the Morandoo sidings outroad adjacent to the Port Waratah Coal Loader balloon loop. The estimated rail movements for Stage 1 are given in Table 6.4 below.

Table 6.4 Daily Train Movements – Container Terminal and General Cargo Handling Facility

Year	No. of Train movements	
	Container Terminal	General Cargo Handling Facility
2002/3	1	<1
2003/4	2	<1
2004/5	6	<1
2005/6	8	<1

Consideration

The Rail Access Corporation (RAC), now the Rail Infrastructure Corporation (RIC), although supporting the use of rail, raised concern at the level of assessment of rail related noise and vibration impacts associated with rail operations within the MPT and along haulage routes. The RIC requested that an assessment of vibration impacts should be undertaken and mitigation measures should be identified for inclusion in the design of the rail system. The Department considers that such an assessment should be undertaken as part of the detailed design of the new rail line and associated infrastructure and recommends that prior to the commencement of construction of the proposed MPT and associated rail infrastructure, and in consultation with RIC, the applicant will be required to prepare a Vibration Assessment Report. The report should be prepared in consultation with the RIC and be approved by the Director-General. The report will be required to propose measures to be incorporated into the design of the railway to address potential vibration impacts.

Noise issues associated with rail operations are addressed in Section 6.11 of this report.

6.2 NOISE

Noise is addressed in Section 13 of the EIS. A summary of predicted noise sources is provided below:

The proposed site remediation is a “scheduled” activity under the *Protection of the Environment Operations Act* 1997 and General Terms of Approval relating to noise from these activities is required from the Environment Protection Authority (EPA). The EPA has advised that the construction and operation of the MPT does not require an Environment Protection Licence as it is not a “scheduled” activity.

Site Preparation and Remediation

The primary sources of noise during the demolition phase would be from machinery such as pulverisers and rock hammers which the EIS estimates to have a sound pressure equal to or less than the background noise level at the

nearest residences. The EIS estimates that the calculated sound pressure level of demolition machinery is within EPA guidelines.

The proposal does not aim to involve the use of explosives in the demolition of heritage structures. The EIS proposes that if blasting were to be used, the blasting contractor would be required to demonstrate compliance with EPA criteria prior to the commencement of blasting.

During remediation the major source of noise pollution is predicted to be machinery such as excavators and graders. The noise impact will vary depending on where remediation activities are taking place within the Closure Area. The worst impacts will occur when works are taking place at locations closest to residences across Industrial Drive (approximately 100m distance). The EIS predicts that the EPA's construction noise guidelines will be met at these times.

Construction

During construction of the MPT, the EIS estimates that the primary sources of noise will be dredging operations, piling associated with berth construction, blasting of bedrock in the bed of the Hunter River to facilitate dredging and construction associated with the access road and the new rail line. The EIS and supplementary assessment provided by the Applicant demonstrate that the EPA construction noise criteria can be generally met, with the exception of pile driving activities which may exceed the criteria by between 3 and 11dB(A).

Operation

The major noise sources from the operation of the MPT would be:

- heavy vehicle movements within the site;
- noise from heavy vehicles on public roads;
- noise from the rubber tyred gantries (RTGs) and movement of containers;
- reversing alarms;
- noise associated with the berthing of ships; and
- rail noise both within the site and on the main rail line.

The EIS examined three operating scenarios for the MPT: the initial phase where all containers are transported by road, a transition phase where 60% of containers are transported by rail and the design operations where 75% of containers are transported by rail.

The EIS, and supplementary information provided by the applicant, concluded that noise from the operation of the terminal, and in particular noise generated by the operation of the rail line, would exceed EPA criteria at a number of locations, and at one location by up to 20dB(A) under certain meteorological conditions. The EIS proposed a number of potential ameliorate measures including acoustic barriers and management measures such as train scheduling and speed. The EIS however did not undertake qualitative

assessment of these measures to establish the extent to which they could assist in the achievement of EPA criteria.

Consideration

A number of submissions from community members raised concern about the impacts of noise from the proposal. The concerns principally relate to ensuring that noise monitoring is conducted adequately and that attenuation measures are implemented.

Comments were provided from the Rail Access Corporation (RAC), the Environment Protection Authority (EPA) and Council on noise issues. All three raised concerns regarding the level of assessment undertaken in the EIS. Concerns related to related to monitoring locations for background noise levels, the application of construction noise criteria, the degree of detail included in the construction noise assessment, and the depth of assessment of noise impacts for the three operational scenarios.

At the request of the EPA and the Department, BHP submitted a revised noise impact assessment in a document titled '*Response to EPA Request for Additional Information – Noise Issues, BHP Newcastle Steelworks Redevelopment*'. Following examination of this document, the EPA indicated to the Department that it was satisfied that the revised noise impact assessment adequately identified the appropriate noise criteria and modelled the likely maximum level of noise associated with demolition, site preparation, dredging, piling and wharf, and road and rail infrastructure construction activities.

The EPA has provided its GTAs for the site remediation. The GTAs require the development of a Construction Noise Protocol and a full assessment of noise mitigation before any variation to the construction noise limits can be considered. The EIS indicates that construction blasting may be used to a limited extent in the demolition of buildings or to remove rocks to deepen existing berths. The EPA is satisfied that there are sufficient mechanisms available to ensure compliance with appropriate amenity criteria for overpressure and ground borne vibration associated with blasting.

In terms of operational noise impact assessment, the EPA provided advice to the Department that it was satisfied that the meteorological data and methodology applied to determine background noise levels and assess noise impacts, as presented in the additional information, is acceptable. The assessment predicts that noise levels associated with the operation of the terminal will exceed the recommended night-time criteria at a number of locations. The EPA has noted that the assessment does not contain a quantitative evaluation of noise mitigation strategies, and EPA is therefore unable to determine if all feasible and reasonable on-site mitigation strategies have been considered.

The EPA recommended a condition for inclusion in the consent that would, in the event that the proponent is unable to achieve the noise limits specified in

the consent, enable the Director-General, in consultation with the EPA, agree to negotiate the noise limits up to 5dB(A) above the limits specified in the consent, subject to BHP demonstrating that all reasonable means to mitigate noise impacts have been considered. Under these circumstances, BHP must submit an application to the Director-General that includes:

- full details of all noise mitigation measures proposed to be implemented;
- a quantitative analysis of the extent to which the mitigation measures will achieve the noise limits specified in the consent;
- identify all residential properties and sensitive receivers likely to be affected when all feasible on-site mitigation strategies have been taken into account; and
- details the outcome of a community consultation process to be implemented by the proponent to identify alternative on-site of off site mitigation strategies that may be acceptable to the community.

Conclusion

The Department is satisfied that noise associated with site remediation and construction can be effectively managed through the recommended conditions of consent. With regard to noise associated with remediation activities, the EPA has provided GTAs which specify noise limits to be applied to remediation activities and require a construction noise protocol to be prepared and approved by the EPA which must address measures to mitigate noise impacts. The protocol will also apply to MPT construction activities.

In terms of operational impacts, The proponent's assessment indicates that at a number of locations, the EPA's *Industrial Noise Policy* criteria may not be met, however proposed mitigation strategies have not been fully evaluated. The Department therefore has recommended that the *Industrial Noise Policy* criteria be applied to the development, with provision for the limits to increase by up to 5dB(A), where the proponent can demonstrate that all mitigation measures have been fully assessed in terms of their ability to meet the criteria and that community consultation has been undertaken to identify alternative on-site or off-site mitigation strategies that may be acceptable to the community.

The recommended conditions also provide for the implementation of a noise monitoring regime through all phases of the development.

6.3 AIR QUALITY

Air quality and meteorology are discussed in Section 12 and Appendix K of the EIS.

Demolition

The EIS identifies the major potential sources of air pollution during the demolition of structures in the Closure Area as asbestos and particulates (including Total Suspended Particulate (TSP), PM_{10} and deposited dust). The EIS proposes that the removal of asbestos will be

conducted by a trained asbestos removalist specialist, in accordance with the WorkCover guideline on asbestos removal and the *Occupational Health and Safety (Asbestos Removal Work) Regulation* (1996).

The EIS indicates that the methods of demolition proposed would have the potential to release particulate into the air. These methods are heavy machinery demolition, controlled induced structural failure and dismantling.

Site remediation

The major impacts identified by the EIS as a result of site remediation are nuisance effects from odour and dust emissions and potential adverse health effects due to increases in suspended particulate levels, metals, PAHs and VOCs. Estimation and modelling of potential odour sources and dust emission rates was not conducted for the EIS due to the transient nature of the emission sources.

The EIS identified the following activities as potential sources of odour and dust:

- Excavation and earthworks;
- Site regrading;
- Dumping, stockpiles, transfer of fill;
- Machinery and vehicle movements off site; and
- Wind pick-up of dust from exposed areas.

The EIS indicates that maximum levels of xylene and benzene measured in groundwater in the Closure Area are at levels just equal to or just over published odour detection thresholds. This means they are a potential source of odour. The EIS proposes the location of sediment ponds at a distance of no less than 200m to the nearest residence to minimise the potential for offensive odours from these ponds. The EIS also proposes that contaminated fill be transported directly from the site, and not be stockpiled. It is also proposed that soiled machinery and vehicles be washed prior to leaving the site.

Construction and Operation

Dust would be potentially generated during construction of the MPT from activities such as earthworks and dust blown from exposed surfaces. The EIS states that these emissions would be temporary and would be monitored to ensure they did not exceed set guidelines for TSP, PM_{10} and deposited dust.

The primary influences on air quality during operation of the MPT are likely to be vehicle emissions and trains.

These sources are considered spatially intermittent and not significant in comparison with regional emissions. Combustion from ship boilers is also a source of potential significance. However, emissions are transient and

temporary, and are discharged from stacks at a significant height, which allows good dispersion prior to reaching ground level.

Consideration

The EIS proposes a number of environmental safeguards to minimise the impacts of the proposal on air quality. These safeguards address issues related to remediation, construction and operation of the proposal, and include:

- the preparation of a Environmental Management Plan addressing air monitoring and management issues;
- specific measures to minimise odour emissions, such as covering exposed areas of potentially odorous sources, spraying exposed surfaces where required, and siting odorous materials away from sensitive receptors;
- specific measures to control dust emissions, including covering/spraying exposed surfaces, stabilising long-term stockpiles, sealing access roads, and removing soil from trucks entering and leaving the site.

The EPA requested that BHP provide further information regarding the air quality assessment within the EIS, stating that it was unable to provide General Terms of Approval for the proposal until this additional information was supplied.

The additional information required included a detailed inventory of pollutant sources potentially occurring during the proposed remediation of the development site. The inventory was required to:

- consider pollutants such as total suspended particles (TSP), particulate matter below 10 microns in size, heavy metals, benzo(a)pyrene and polycyclic aromatic particles (PAHs);
- be supported by calculations and assumptions made to derive emission factors and quantify off-site impacts;
- use an appropriate dust dispersion model for dispersion modelling of TSP emissions.

In response, BHP submitted additional information titled ‘Response to EPA Request for Additional Information – Air Quality Issues’. Based on the further information provided, the EPA stated it was generally satisfied with the meteorological data used in the assessment of air quality impacts of site remediation.

However, the EPA noted that there would be difficulty in determining the extent of odour emissions arising from contaminated soils disturbed during remediation. Similarly, the EPA noted it was difficult to determine the potential for pollutants in the soil (eg. heavy metals and PAHs) which may be associated with emissions of dust, to exceed appropriate ambient goals.

During construction and operation of the MPT, the EPA noted that there was the potential for dust emissions to exceed acceptable ambient goals at

residential properties adjoining the site. Although the air quality impacts of particulate matter can be quantitatively determined, they originate from a wide-variety of sources in the air-shed, including existing industries. Therefore, the EPA stressed that the actual contribution of specific sites would be difficult to determine.

As such, the EPA stated it was not feasible or correct to apply the ambient air quality standards as a statutory compliance limit to the proposed development, and recommended that the proponent develop a reactive dust management strategy and continued ambient air quality monitoring. These recommendations were included in the EPA GTA for the proposal, and have been incorporated into the recommended conditions of consent.

No other agencies raised concerns about air quality impacts of the proposed development. A number of community submissions expressed concern regarding general air pollution from the proposal. The recommended conditions of consent for the proposed development will minimise the effects of air pollution.

Conclusion

The EPA has provided the Department with its GTA for the proposal. These GTA include measures to minimise the impacts of the proposal on air quality, including provisions to prevent odour and dust emissions, and ambient and meteorological monitoring requirements. The Department has incorporated these GTA into the recommended conditions of consent for the proposal, and is therefore satisfied that the potential impacts upon air quality can be minimised.

6.4 FLORA AND FAUNA & ESTUARINE ENVIRONMENT

6.4.1 Flora and Fauna

The flora and fauna assessment (Section 15 of the EIS) included a survey of the Closure Area, and searches of relevant databases to target threatened species. The EIS stated that given the highly modified and often contaminated nature of the Closure Area, it did not provide suitable habitat for any threatened species of flora or fauna, and that no Species Impact Statement (SIS) was required.

Consideration

In its submissions, the National Parks and Wildlife Service (NPWS) raised the following concerns:

- The flora and fauna assessment did not consider the environmental impacts of pumping dredged material into the BHP Kooragang Island landfill;
- The search of databases failed to identify the presence of the Green and Golden Bell Frog (*Litoria aurea*) within this landfill site. This species is

listed as Endangered on Schedule 1 of the *Threatened Species Conservation Act 1995* (TSC Act);
- The impacts of the proposal on this species have therefore not been considered.

The NPWS recommended that an assessment of the impacts of the proposal on the Green and Golden Bell Frog be conducted, and amelioration measures, including project redesign, be identified.

The land on which the settling basins are proposed to be located is an existing waste disposal facility owned by BHP, and currently licensed by the NSW EPA as a non-putrescible solid waste (class 2) landfill, therefore environmental impact assessment of this facility is beyond the scope of the EIS. Notwithstanding this, the Department forwarded the NPWS concerns to BHP for investigation and comment. BHP contacted Dr Michael Mahony of the Department of Biological Sciences at Newcastle University, who provided the applicant with details of the location of Green and Golden Bell Frog populations within the landfill site.

BHP stated that although several of these populations were located in close proximity to settling basins, one being located within the Category 2 settling basin, the impacts on the Green and Golden Bell Frog would be significantly reduced as a result of the deferment of Stage 2 of the proposal as the volume of material to be deposited within the Category 2 basin would be only approximately 324,000 m^3, compared to 1.4 million m^3 for both stages, this would enable disposal to be undertaken in a manner that would avoid disturbing areas where the species had been identified.

Conclusion

The Department is satisfied that the proposed Stage 1 development at the Closure Area site would not significantly affect any threatened species, populations or ecological communities, or their habitats.

In terms of the Kooragang Island Disposal, The landfill is licensed by the EPA to accept Class 2 solid waste, and is beyond the scope of any development consent for this proposal.

6.4.2 Estuarine Environment

Section 14 of the EIS considers the impacts of dredging on the estuarine environment. The impacts considered include:

- disturbance to benthic organisms and their habitat;
- fish kills resulting from blasting activities;
- general disturbance to aquatic wildlife; and
- the introduction of exotic marine species from the release of ship ballast water.

The EIS proposes a number of safeguard measures to minimise these impacts:

- installation of silt curtains around active dredging and wharf construction areas;
- minimise blasting activities; and
- maintain ballast water monitoring, and exchange ballast water mid ocean.

It is concluded that provided the proposed safeguard measures presented in the EIS are implemented, the impacts on the estuarine environment would be minimal.

Consideration

The NPWS expressed concern that the impacts of dredging upon tidal movement and water levels in the South and North Arms of the Hunter River had not been considered, stating that changes to water movement and levels could potentially affect foraging habitat for wading birds, including threatened species in the North Arm of the river.

The proposed Stage 1 dredging area has previously been dredged to depths ranging from 7.3m to 12.8m below chart datum, to accommodate shipping for the former steel works. The main navigational channel leading into this area is dredged to a depth of 15.2m below chart datum. The amount of dredging required to achieve the desired design dredge for Stage 1 is predicted to be in the order of 324,000m^3. The Department does not consider that the proposed level of dredging is of such an amount that it is likely to significantly affect foraging habitat. The NSW Waterways Authority, which is required to grant approval for the proposed dredging works under the *River and Foreshores Improvement Act 1948* is satisfied that a Part 3A permit under that Act is able to be granted for the proposed derdging works, subject to General terms of Approval.

Conclusion

The Waterways Authority has provided GTAs for the proposal, which have been incorporated into the recommended conditions of consent. The GTAs include the preparation of Dredging Management Plan prior to the commencement of dredging work, and the carrying out of a hydrographic survey following the conclusion of Stage 1 of the proposal.

The Department is satisfied that given the significant reduction in the scale of dredging required for the proposal, the impacts on water movement and levels, and particularly on habitat in the North Arm of the river, will be minimal.

6.5 LANDSCAPE AND VISUAL IMPACTS

Section 17 of the EIS considers the visual impacts of the proposal. A visibility assessment was undertaken involving:

- determination of the various categories and situations from which the proposed site preparation, remediation and construction activities could potentially be visible; and
- a detailed field inspection (conducted in July 1999) to determine the extent of visibility.

A summary of this assessment is provided in Section 17 of the EIS.

The key visual impact of the development will be the removal of significant structures including the blast furnaces, gas holders and mill buildings, which collectively have been prominent visual features of the Newcastle region since the early twentieth century.

Once constructed, the MPT would consist of a number of modern buildings and crane structures of an industrial appearance, and pavement areas storing stacks of containers, which would be visible from viewing locations surrounding the site. The development will be most visible from Kooragang Island across the Hunter River to the North. This area is a zoned industrial area, however is traversed by Cormorant Drive which is a major arterial road linking Newcastle with Port Stephens Shire.

The Container Terminal and General Cargo Handling Facility would be prominent at night, being illuminated by floodlights to facilitate 24 hour operation. However, as existing land uses at the Port are illuminated at night, the proposal would be viewed with the industrial precinct forming a backdrop to the proposed operations. Floodlighting would be designed to direct light into the Terminal areas providing a minimal contribution to artificial light glow on the night sky.

The EIS proposes a number of environmental safeguards to minimise the visual impacts of the proposal. These safeguards include measures to:

- maintain existing boundary vegetation;
- control and minimise fugitive dust emissions;
- minimise the visibility of works on-site;
- incorporate appropriate building and lighting design;
- provide appropriate on-site landscaping.

Consideration

Newcastle City Council noted that the EIS did not contain any detailed elevation plans.

No other submissions were received regarding the visual impacts of the proposed MPT. However, a number of submissions argued that a prominent structure such as the gasholders or one of the remaining blast furnaces should be retained in-situ to enable the public to interpret the steelmaking history of the site. Heritage conservation issues are discussed in Section 6.6 below.

The EIS contained little information with regard to the actual scale of the structures which would form part of the proposal. The Department requested further information from the Applicant regarding elevations, particularly with respect to the portainer cranes which will be the most visible structures within Stage 1 of the MPT. The Applicant subsequently provided the Department with an elevation of the portainer crane structure as well as photographs of similar structures of this nature from other ports. Figure 5 provides an elevation plan of the Portainer cranes proposed to be used at the MPT.

Given the land is zoned 4(b) (General Industrial Zone), under Newcastle Local Environmental Plan (1987), the Department considers that the proposal is in keeping with the industrial character of the Port. As such, the proposal is not anticipated to have an adverse impact on the visual amenity of the area.

Conclusion

The Department has incorporated a number of measures into the recommended conditions of consent to minimise the visual impacts of the proposed development, including the preparation of a Landscape Management Plan and controls on external lighting at the facility to screen light away from sensitive receptors.

6.6 CULTURAL HERITAGE

Cultural Heritage is addressed in Section 19 and Appendices N to Q of the EIS.

6.6.1 Non Indigenous Heritage

The development application proposes that for site preparation and remediation of the MPT footprint, demolition of a number of heritage items listed under Newcastle LEP 1987 will be required. The LEP requires development consent be obtained prior to the demolition of any items listed as being of State Significance in the LEP. Figure 6 shows the items and their location in the context of the site and the proposed MPT.

No structures within the Closure Area are listed on the State Heritage Register, therefore approval under section 58 of the *Heritage Act 1977* is not required for the demolition of steel structures. No structures are listed on the Register of the National Estate (Cwth).

The EIS included Statements of Heritage Impact (SOHIs) for these items as well as the No.4 Blast Furnace, which is listed as being only of local significance in the LEP, but is considered to be of State significance by the Applicant's heritage consultants and was therefore included in the assessment.

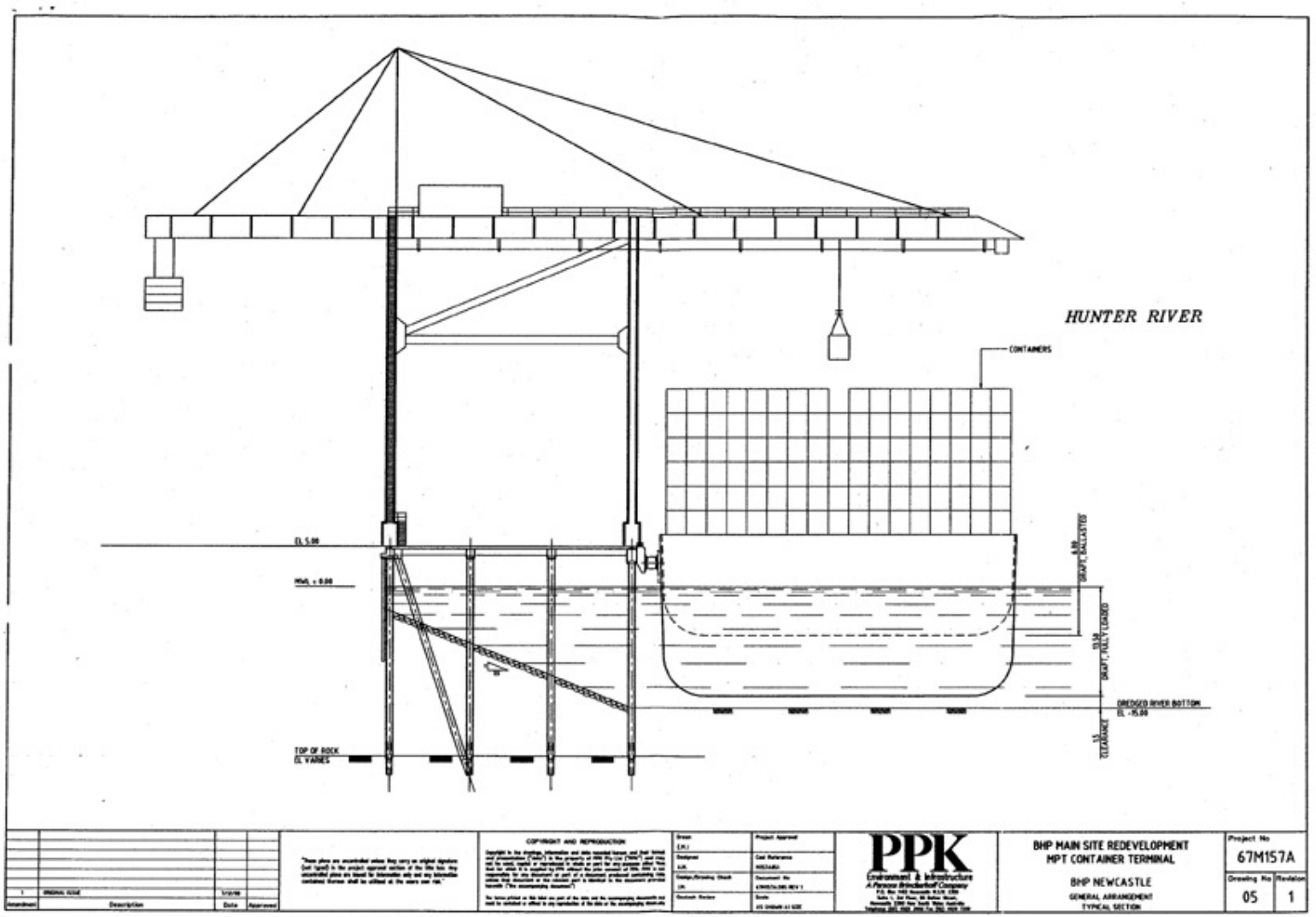
HUNTER RIVER
CONTAINERS
EL 5.00
MWL = 0.00
TOP OF ROCK
EL VARIES
DRAFT, BALLASTED
DRAFT, FULLY LOADED
DREDGED RIVER BOTTOM
EL -15.00
CLEARANCE
PPK
Environment & Infrastructure
A Parsons Brinckerhoff Company
BHP MAIN SITE REDEVELOPMENT
MPT CONTAINER TERMINAL
BHP NEWCASTLE
GENERAL ARRANGEMENT
TYPICAL SECTION
Project No
67M157A
Drawing No
05
Revision
1

Figure 5

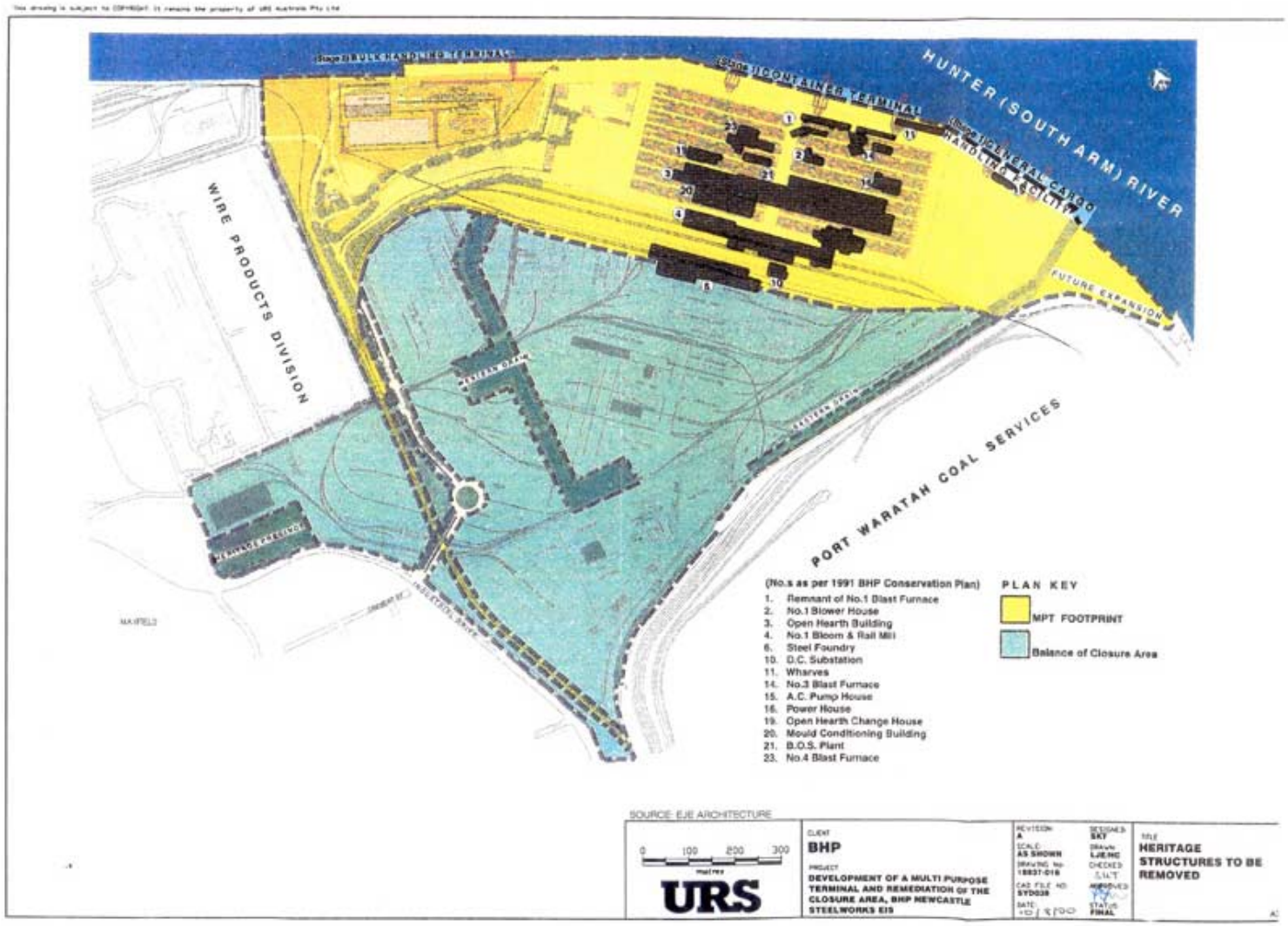
HUNTER (SOUTH ARM) RIVER
WIRE PRODUCTS DIVISION
PORT WARATAH COAL SERVICES
FUTURE EXPANSION
(No.s as per 1991 BHP Conservation Plan)
1. Remnant of No.1 Blast Furnace
2. No.1 Blower House
3. Open Hearth Building
4. No.1 Bloom & Rail Mill
6. Steel Foundry
10. D.C. Substation
11. Wharves
14. No.3 Blast Furnace
15. A.C. Pump House
16. Power House
19. Open Hearth Change House
20. Mould Conditioning Building
21. B.O.S. Plant
23. No.4 Blast Furnace
PLAN KEY
MPT FOOTPRINT
Balance of Closure Area
SOURCE: EJE ARCHITECTURE
0 100 200 300
metres
URS
CLIENT
BHP
PROJECT
DEVELOPMENT OF A MULTI PURPOSE TERMINAL AND REMEDIATION OF THE CLOSURE AREA, BHP NEWCASTLE STEELWORKS EIS
REVISION A
SCALE AS SHOWN
DRAWING No 18837-018
CAD FILE NO SYD038
DESIGNED SKT
DRAWN LJE/MC
CHECKED
APPROVED
STATUS FINAL
TITLE
HERITAGE STRUCTURES TO BE REMOVED

Figure 6

In terms of heritage items located in the remainder of the closure area (ie non MPT), the DA does not propose demolition of these items. Future development in these areas will be subject to development applications, at that time, which would address the impact of development on these items.

The EIS proposes that the heritage significance of the closure area, and in particular the iron and steelmaking process, be recorded and interpreted through the following:

- recording of items to be demolished;
- protection and interpretation of below ground remains;
- the creation of an Iron and Steelmaking Interpretive Centre to be located in the building known as Delprat's Quarters; to be managed by the Newcastle Regional Museum and incorporate salvaged items from the MPT area; and
- the establishment of a State Industrial Archaeological Repository to be located in the Ex-Tool Room, which is proposed to be donated to the NSW Heritage Council.

Consideration

The NSW Heritage Council, while supporting the retention of the site and the port in industrial use, raised considerable concern that the EIS had not adequately considered options that would have provided tangible recognition of a significant heritage resource. The Council's position is that it is opposed to the demolition of all heritage items within the MPT footprint, however would not object to the demolition of essential items should the MPT proceed.

The Heritage Council recommended that all heritage items be retained in situ, until there is certainty of the MPT proposal proceeding through the issue of a construction certificate and the existence of a building contract for the development. The Heritage Council also recommended that as a minimum, an industrial landmark be retained on the site as a means of recognising the site as a major steelmaking site. The Heritage Council suggested that this could be achieved through the retention of Blast Furnaces No. 3 and/or No.4 in situ rather than a new interpretive work or sculpture.

Newcastle City Council stated that its Heritage Officer supports the Heritage Councils views and noted that 19th Century Archaeology known to exist on the site was not addressed in the EIS, however did not elaborate on what this archaeology might be or where.

The National Trust, in its submission, stated that the proposed future use of the site did not adequately take into account its heritage significance and that consideration of alternatives has been inadequate and cursory. The Trust raised particular concern that the demolition of the site has been linked directly to its remediation, yet there is no guarantee that the MPT would be built once the site is remediated, raising the possibility that the structures may be demolished needlessly. The Trust was also critical of the proposed

methods of interpretation which would it claimed would be token and in some cases inaccessible to the public.

Five submissions from individuals and community groups raised the issue of heritage conservation. Of these, the majority did not object to the demolition of the heritage structures, on the basis that retention of the structures would have cost and safety implications which may jeopardise the future development of the site for port related purposes. Notwithstanding this, the submissions raised concern as to the practicality, appropriateness and viability of the proposed methods of interpretation proposed in the EIS.

Based on the EIS assessment and comments raised in submissions, the Department considers that several factors need to be taken into consideration in determining whether the demolition of heritage structures within the MPT footprint is acceptable:

(i) Whether the structures can be adaptively re-used as part of the development

The heritage structures proposed to be demolished within the MPT footprint, were generally constructed for a specific purpose (steelmaking), are in poor condition and are not suited to adaptive re-use as part of the MPT, and in some cases not suited to adaptive re-use for any purpose. The MPT requires large areas of hardstand for the storage and handling of containers and general cargo. The heritage structures within the MPT footprint area could not be re-used as part of the proposal.

(ii) Whether the retention of the structures would sterilise all or a significant part of the site the site for the proposed use.

The EIS (Appendix P) analysed 17 different layout options for the MPT, an initial 12 to determine the optimum balance between heritage conservation and economic viability, and a further 4 options with a view to retention of specific heritage items. In addition, a further option was analysed at the request of the Department (Appendix C to this Report). The proponent argues that its analysis has found that in all cases the retention of the heritage structures within the MPT envelope would compromise the economic viability of the facility.

The key constraint to retention of the heritage structures is the safety requirement that there be a setback of 150m behind the portainer cranes which will be located along the shipping birth. The Department contacted Newcastle Port Corporation to confirm the setback requirements. The Corporation verbally advised that the setback requirements for equipment of this nature were standard in container port design.

The Blast Furnaces No. 3 and 4, the Power House and the No. 1 Blower House are all located within this area and the retention of all or any of these items would sterilise a significant length of berth space, requiring the construction of additional wharf and associated dredging. This would

significantly increase the capital costs of constructing the MPT while also reducing the efficiency of it operations.

In terms of the structures located outside the Portainer Crane setback, these structures including the Open Hearth Building, The Mould Conditioning Building and the Steel Foundry are all of such a significant size that their retention would sterilise significant areas which would be required for container handling and storage. Their retention would preclude the development of a Container terminal in this location.

(iii) The costs associated with the retention, stabilisation and on-going maintenance of the structures

Given the age and condition of many of the heritage structures within the MPT footprint, the retention of all or some of the items, or representative structures such as the blast furnaces, are likely require considerable capital expenditure to ensure they do not pose a safety hazard to workers on the MPT site. There would also be considerable on-going costs in maintaining these structures. No specific costs however were included in the EIS,

(iv) Whether the retention of the structures would prevent the effective remediation of soil and groundwater

The EPA has advised that the remediation of soil and groundwater at the site will be subject to the provisions of the *Protection of the Environment Operations Act 1997* and/or the *Contaminated Land Management Act 1997.* In its General Terms of Approval the EPA requires the applicant to undertake soil remediation of the site by way of capping with a hard stand or seal bearing layer consisting of material at least 500mm thick and having a permeability less than $K=10^{-9}ms^{-1}$ or alternative acceptable to the EPA.

In terms of groundwater remediation, The EPA requires the applicant to investigate the use of funnel and gate technology, or alternative technology acceptable to the EPA, to intercept and treat groundwater flowing toward the Hunter River. The EPA will require the implementation of the system to ensure groundwater entering the Hunter River meets the objectives of the ANZECC guidelines. The implementation will be under the Environment Protection Licence of the *Contaminated Land Management Act 1997l.*

The retention of heritage structures on the site may compromise the achievement of the soil and groundwater remediation objectives. At this stage it is not possible to determine whether a groundwater remediation system can be designed that will not require demolition of certain heritage items or be compromised by their retention. The EPA has verbally indicated however, that prior to requiring any remediation strategy to be implemented, it would consult with the Department on heritage implications.

(v) Whether the heritage significance of the site can be interpreted by other means should demolition proceed

As outlined above, BHP has proposed a number of measures which could be put in place to enable interpretation of the heritage of the closure area and the industrial activities which were undertaken on the site. These include the establishment of an Iron and Steel Making Interpretive Centre, donating a building to the Heritage Council to house a State Industrial Archaeological Repository, the protection and Interpretation of below ground remains and recording of items to be demolished. It should be noted that the company has undertaken extensive recording of the industrial and social history of the site.

The Department considers these proposals are appropriate, however details on funding, ownership and on-going management have not bee addressed in any detail. Should consent be granted, a condition is recommended that will require the applicant to prepare and submit a strategy for the approval of the Director-General, in consultation with the Heritage Office and the Council that details how the proposed measures are to be put in place, including the establishment of a heritage precinct in the Western Portion of the Closure Area and details of funding, ownership and on-going management arrangements.

Conclusion

The Department is satisfied that the retention of heritage structures within the MPT footprint would compromise it economic viability. The socio-economic benefits of the MPT are considered to outweigh the costs associated with the demolition of the heritage structures, which are not able to be adaptively re-used as part of the proposal, and the retention of which would sterilise large sections of the MPT footprint, rendering the development uneconomic.

Notwithstanding the above, the Department concurs with the position put forward by the Heritage Council and the National Trust that should demolition be permitted, it only occur where it can be demonstrated that there is a commitment in place to develop the MPT, following remediation.

The Department's position is that the Applicant should only be permitted to demolish the heritage structures where it can be demonstrated that:

- there is a commitment to the construction and operation of the MPT. This would be demonstrated by way of the Applicant submitting to the Minister, for his approval, documentation by way of a copy of a contact or agreement between the applicant and other parties in respect of the construction and operation of the MPT, prior to any demolition occurring;
- certain structures are required to be demolished to enable soil and groundwater remediation to occur, in accordance with an EPA requirement under the Environment Protection Licence or the *Contaminated Land Management Act 1997*; or,
- any structure(s) presents a safety hazard. In this respect the Applicant would be require to submit, for the approval of the Minister, a report prepared by a suitably qualified person, on the safety or integrity of the heritage item and demonstrating that the item could not be feasibly repaired or stabilised.

A condition of consent has been recommended that incorporates the above requirements.

A condition is also recommended requiring the preparation of strategy for the interpretation of industrial heritage in the Closure Area, in consultation with the NSW Heritage Office.

6.6.2 Indigenous Heritage

A search of the NPWS Register of Aboriginal Sites was undertaken by the Applicant on 24 May 1999 to determine whether there were any known Aboriginal sites within or surrounding the Closure Area.

No Aboriginal sites were identified through the search. Given that Aboriginal archaeological sites have been found throughout the Newcastle area and that the Closure Area is located in close proximity to the Hunter River, it is highly likely that the area was once occupied by Aborigines. Had Aboriginal sites been present at the site, it is likely that they would have been destroyed or disturbed during the past reclamation activities and construction of the Steelworks.

The National Parks and Wildlife Service did not raise any concerns with respect to Aboriginal archaeology.

Conclusion

The Department is satisfied that the impacts upon cultural heritage have been afforded adequate consideration, and agrees with the findings presented in the EIS.

6.7 SOIL REMEDIATION

Soil Contamination is addressed in Section 11 and Appendix C of the EIS.

The findings of site investigations and the Closure Area Risk Assessment indicate that PAHs are the only group of chemicals present in the surface (top 0.5 m) of the fill layer which occur in sufficiently high concentrations to warrant management prior to redevelopment of the Closure Area.

There is no evidence of the widespread occurrence of elevated concentrations of volatile organic compounds such as BTEX in surface fill materials. The presence of tar or tar like materials was found at some locations, but no areas of free tar that might be associated with a feature such as a buried tar pond were uncovered.

The EIS concludes that capping of the Closure Area would address the health risk issues resulting from contamination of the soils, by providing a physical barrier minimising the potential for human contact with materials that have high concentrations of contaminants.

It is estimated that a volume of 450,000 m^3 of coal washery reject (CWR) would be required to provide a minimum uniform 0.5 m cap over the entire surface of the Closure Area. It is possible that the volume of CWR required would be much less as much of the Closure Area will also be covered with hard pavement, which is also a suitable capping material.

The EIS proposes the preparation of an Environmental Management and Monitoring Plan (EMMP) which would detail excavation procedures and the management of materials exposed during excavation.

Consideration

The proposed remediation works will require the approval of the EPA under the *Protection of the Environment Operations Act 1997.* The EPA forwarded a submission to the Department following public exhibition stating that that the works proposed by BHP did not adequately address soil contamination issues. Following further discussion on these matters with BHP, the EPA forwarded General Terms of Approval which specified required measures to be incorporated into the site remediation.

These measures included;

- The preparation of a Contaminated Site Environmental Management Plan for the education and use of site contractors and employees to ensure the integrity of the capping system is maintained and if breached, procedures for rectification;
- Required thickness and permeability of capping for the site which would require a seal bearing layer of $K=10^{-9}ms^{-1}$ over proposed MPT footprint and a layer of $K=10^{-7}ms^{-1}$ over all other areas within the Closure Area;
- A capping maintenance plan;
- Notification (to the EPA) of any contamination not identified in the EIS that is encountered during any activities on the closure area.

BHP sought clarification on a number of these requirements and consequently, a meeting was held between the EPA, BHP and DUAP to further clarify the EPA's requirements for remediation work for the proposal.

The following issues were discussed:

Capping thickness

BHP raised issue with the requirement that the capping comprise a seal bearing layer consisting of a properly designed and engineered layer of material at least 500mm thick and have a permeability of less than $K=10^{-7}ms^{-1}$. The company argued that the seal bearing layer itself need not be 500mm thick, as the determining factor is its permeability. The company proposed changing the requirement to allowing a layer of inert material 500mm thick which incorporated a seal bearing layer to the required permeability. The inert material would be 500mm thick to ensure separation of humans from contaminants. The EPA rejected this argument on the grounds that one of the key objectives of the

capping is to slow migration of surface waters to groundwater and that it considered that 500mm, while acceptable, is a low level of protection for public health.

BHP requested that Areas M11 and M23 be excluded from capping requirements on the grounds that they were heritage areas where site remediation was not being undertaken. BHP also sought clarification as to whether existing hardstand areas which complied with the capping requirements, could be exempt from the capping requirements if retained until such time as development occurred on that site.

The EPA indicated that, provided BHP provide plans showing the extent of the proposed heritage precinct, Areas M11 and M23 could be excluded form the capping requirements. BHP, had not forwarded this information prior to the finalisation of the EPA's General Terms. Therefore, these areas will be subject to the capping requirements. Should the Minister grant consent to the development, a modification to the consent may be required, once the boundaries of the heritage precinct have been determined.

In terms of existing hardstand areas, the EPA has accepted that these areas already meet its requirements and that therefore they would be exempt from requiring new capping to be implemented.

Disposal plans for stockpiled soil

The EPA requires that any stockpiled soil from the area surrounding the decommissioned Coke Ovens 1, 2 and 3 would need to be removed prior to the commencement of construction and contained in areas proposed to be covered by hardstand or managed by an alternative method approved in writing by the EPA. BHP stated that this requirement was unnecessary as the stockpiled soil has already been removed. The EPA however has indicated that this requirement remains in place until such time as BHP provides documentation to demonstrate that the material has been removed from the site and disposed of in an environmentally acceptable manner.

Leachate from proposed emplacement area

The EPA requires that the prior to any material being stored in the proposed emplacement area shown in Figure 6.4 of the EIS, a leachate barrier system that meets EPA requirements must be installed. The Applicant requested that this requirement be removed as the condition also required the Applicant to provide the EPA with how environmental goals would be met through benchmark techniques in the EPA document titled *Environmental Guidelines: Solid waste Landfills*. The EPA rejected this on the grounds that the proposed emplacement area operated in effect as a landfill and the timing of future site development in the closure area outside the MPT was not known nor was future ownership, which may compromise future environmental management of the emplacement facility.

Conclusion

The EPA has revised the GTAs in the light of discussions with BHP and the Department and indicated to the Department that it is satisfied that the proposed remediation measures required are appropriate. The Department is therefore satisfied that soil remediation is able to be adequately managed.

6.8 WATER QUALITY

6.8.1 Groundwater Remediation

Groundwater issues are considered in Section 10 of the EIS.

The Closure Area Risk Assessment found contamination of groundwater by a number of inorganic and organic chemicals. The chemicals of most significance were poly-aromatic hydrocarbons (PAHs) and other phenolic compounds. The assessment concluded that although groundwater discharges from the site, and as a consequence provides a mechanism for the migration of site contaminants into the Hunter River, the groundwater conditions did not warrant remedial action because they had a low potential to present an unacceptable risk to the river.

The EIS also states that the recontouring and capping of the site and installation of a new surface water management system, should act to reduce accessions of contaminated water into the groundwater system and hence into the Hunter River.

Consideration

The EPA has advised the Department that it rejects the conclusion drawn in the EIS that groundwater conditions did not warrant remediation, and stating that the works proposed by BHP did not adequately address groundwater contamination issues. The EPA has subsequently issued a draft declaration under the *Contaminated Land Management Act 1997* which declares the site as being a significant risk and requiring remediation. Following further discussions between the Applicant and the EPA, the Applicant has agreed to undertake remediation works, including groundwater, as part of a Voluntary Remediation Agreement. Through this process, the EPA will require Applicant to manage and treat groundwater contamination to be consistent with relevant guidelines specified by the Australian and New Zealand Environment and Conservation Council (ANZECC). The conditions of the agreement are currently the subject of discussions between the Applicant and the EPA.

Notwithsatnding the above, under the *Protection of the Environment Operations Act 1997,* the EPA has included in its GTAs for the proposal, the requirement that the applicant to prepare a report which includes a detailed investigation of Funnel and Gate technology, or an alternative technology, to intercept and treat groundwater flowing in the direction of the hard stand areas. The report is required to show that the proposed technology is able to

treat contaminated groundwater to be consistent with the relevant ANZECC Guidelines for water quality in fresh and marine waters.

Conclusion

The Department is satisfied that groundwater issues are able to be appropriately addressed through the EPA's powers under the *Contaminated Land Management Act 1997* and/or the *Protection of the Environment Operations Act 1997.* The Department has incorporated the EPA's General terms into the recommended conditions of consent for the proposal and is satisfied that, in conjunction with the Voluntary Remediation Strategy to be undertaken, the conditions of consent will minimise the impacts associated with groundwater contamination.

6.8.2 Surface Water

The proposed Surface Water strategy for the site is described in Sections 6.5.3 and Section 10 of the EIS.

The proposed remediation and redevelopment of the site will involve the installation of a new stormwater system. The existing stormwater drains on the site which served the steelworks, are proposed to be decommissioned and replaced with a new system which would involve the re-contouring of the site and the installation of two main waterways (the Eastern and Western Drains), which would be fed by a connecting series of open drains and trunk stormwater pipes. The strategy proposes that the site be divided into catchments, designed such that stormwater runoff flows through the system can be managed. Stormwater would be treated via first flush holding systems for pipes and drains entering the main Eastern and Western Drains, and on the main drains themselves, detention ponds would be installed to ensure water is treated to EPA requirements prior to discharge into the Hunter River.

The proposed stormwater system however is proposed to be installed as development in the Closure area Progresses, beginning with the MPT footprint area.

Site preparation, construction and operation of the MPT, has the potential to produce additional sources of pollution in the form of runoff from contaminated fill and stockpile material.

The EIS proposes a number of environmental safeguards to minimise the impacts related to surface water contamination during these phases including the preparation and implementation of a detailed erosion and sediment control plan, segregating runoff from disturbed area and directing it into sediment ponds for treatment before using it for dust suppression and the erection of bunds, silt fences and diversion drains around stockpile and excavation areas.

Consideration

Newcastle City Council raised a number of concerns with regard to the potential impacts of flooding as a result of the recontouring of the site. Of particular concern was the flood levels near the Administration Building, the proposed Heritage Precinct of Ingall Street, the proposed Sewage Treatment Plant and Industrial Drive. BHP has responded by providing information to the effect that the proposed recontouring of the site would generally not change the flood liability of these areas as the land in these areas is not proposed to be elevated due to the constraints imposed by the heritage significance of the sites. In terms of the STP, the site is already above the 1 in 100 year flood level and will remain so, and flooding on Industrial Drive is outside of the development area.

The NSW Waterways Authority and the EPA have both provided General Terms of Approval with respect to surface water management for the development. Both agencies included a requirement that a detailed Soil and Water Management Plan be prepared for the proposed remediation and construction works to prevent contaminated runoff leaving the site and entering the Hunter River. The EPA also required the preparation of a detailed Stormwater Management Plan for the development. These requirements have been incorporated into the recommended conditions of consent.

As discussed in Section 6.7, the EPA GTAs also include the requirement that the development site be capped in a manner that permits free drainage of the site and avoids surface water ponding.

Conclusion

The Department is satisfied that surface water management during the site remediation, construction and operational phases of the development has been adequately addressed in the EIS and is able to be effectively managed through the implementation of erosion and sediment control plan and a stormwater management plan for the site.

The GTAs provided by the Waterways Authority and the EPA have been incorporated into the recommended conditions of consent for the proposal.

6.9 DREDGING AND WHARF CONSTRUCTION AND GENERAL SHIPPING ACTIVITIES

Dredging Impacts

Dredging is required to provide sufficient depth in berthing basins for ships. In terms of water quality, the potential for water pollution from dredging relates to fuel spillage from the dredge and turbidity in the water from the dredging process. The EIS states that risk of fuel spillage from the dredge can be minimised by ensuring maintenance of the machinery is conducted regularly,

that a spill management plan is in place and that a spill management kit is accessible.

The method of dredging is such that the turbidity is mostly restricted to the area around the cutter head and is likely to involve only short term disturbance of sediments (some of which are contaminated with pollutants such as PAH, total petroleum hydrocarbons and metals such as cadmium and chromium).

Construction of wharf

The EIS identifies potential for the construction of the wharf as part of the MPT to cause sediment plumes and hence turbidity in the river. This is unlikely to have significant long-term impacts on water quality. However, the use of sediment curtains should be considered prior to construction of the wharf, to control sediment dispersal.

General Shipping Activities

The release of ballast water by ships has the potential to introduce exotic marine species to the environment. Safeguards are outlined in the EIS to minimise the risks of the introduction of marine species via ballast water, including implementing a monitoring program and a Ballast Water Management Plan.

The risk of oil spills from ships utilising the MPT is assessed in the EIS as being low. However the EIS proposes that a contingency plan be developed and implemented in the event of an oils spill occurring.

Consideration

NSW Fisheries forwarded a submission to the Department stating it had no objections to the proposed development. The submission recommended that measures to control dredging operations and the use of explosives be incorporated into the recommended conditions of consent for the proposal.

The NSW Waterways Authority also forwarded a submission to the Department stating that it was able to issue a permit for the proposal under the *River and Foreshores Improvement Act 1948* and forwarding its General Terms of Approval for the proposal. The GTAs include measures to control impacts from dredging operations, and pollution of the Hunter River, including the preparation of Dredging Management Plan, to be prepared in conjunction with Newcastle Port Corporation which addresses appropriately designed turbidity controls around the site, identifying river and weather conditions when dredging would be required to be suspended and contingency plans to deal with potential adverse impacts resulting from dredging operations.

The Department has identified a number of measures which should be implemented by way of conditions, should consent be granted, to minimise the impacts of dredging, wharf construction and general shipping activities. These include:

- conduct an ongoing monitoring program during the demolition, decontamination, construction and operational phases, particularly to monitor pollutants in groundwater, surface water and river water adjacent to the Closure Area;
- develop and implement a Dredging Management Plan;
- ensure ballasting is carried out in accordance with *Australian Ballast Water Guidelines* produced by the Australian Quarantine Inspection Service (AQIS);
- develop and implement a Ballast Water Management Plan (incorporating regular monitoring to determine if exotic marine species are being introduced). The plan is to be developed in consultation with AQIS; and
- carry out dredging works in accordance with the dredging protocols developed and used by the Newcastle Ports Corporation.

Conclusion

The GTA provided by the Waterways Authority have been incorporated into the recommended conditions of consent for the proposal, and the Department is satisfied that the impacts of the proposal on the Hunter River can be minimised.

6.10 SOCIO-ECONOMIC IMPACTS

Socio-economic impacts of the proposal are discussed in Section 22 of the EIS.

The EIS estimates that the proposed development will involve a capital expenditure of $270 million.

Socio-economic impacts from the proposal would be most significant in the Newcastle area and the Hunter region. The Newcastle LGA at the last census, had an unemployment rate of 12.4% which was higher than for the Hunter Region as a whole (11.3%) and that of the Sydney Greater Metropolitan Region (7.4%).

The EIS states that the proposed development would generate the following employment in relation to Stage 1:

Table 6.5 – Employment Generation

Activity	Employment
Site Remediation	115
Construction	400
Dredging	21
Operation	300

Employment opportunities would be generated throughout the project and income expenditure from the employment created would have multiplier

effects on the local community through increased employment in companies supplying materials and specialist to the development.

On a wider scale, regional and State economic benefits are predicted to be achieved through reducing costs for regional importers and exporters and benefits for authorities such as the Newcastle Ports Corporation would occur through taxes, leases, fees and charges.

The EIS did not provide any assessment of the impact of the proposed development on community infrastructure and services including housing, education and recreation facilities.

Consideration

The Hunter Valley Research Foundation undertook an economic assessment of the proposal for Department of State and Regional Development[1] . The study found that the total economic impact of construction of the proposal was estimated to be approximately $581.8 million, while the annual economic impact of the proposal, when operating would be in the order of $188.7 million.

In terms of employment, the study predicted that during construction, 1,209 jobs would be created throughout the region and during operation, 593 jobs would be generated.

In terms of impacts on community services and infrastructure, the proposed development is unlikely to create a strain on such facilities given the size of the Newcastle urban area and its ability to absorb the employment generated by the development. The proposal also need to be viewed in the context of the scaling down and closure of the BHP steelworks operations within the closure area, and the spare capacity created by those circumstances.

Conclusion

The Department considers that the Closure Area is a prime industrial site with an excellent port interface. In socio-economic terms, the proposal would be of overall benefit to the Newcastle area and Hunter region and is supported on socio-economic grounds.

6.11 WASTE

Demolition

The EIS indicates that the wastes likely to be generated during the demolition phase include demolition materials and equipment, asbestos contaminated materials, miscellaneous hazardous wastes, and domestic and human waste.

[1] *Proposed Multi-Purpose Shipping Terminal, An Economic Assessment* – Hunter Valley Research Foundation , August 2000

Site remediation

During the decontamination phase, wastes likely to be generated are contaminated subsurface waters and domestic and human waste.

Construction

Waste materials expected to be generated during the construction of the MPT include excess and offcuts of construction materials, arisings, sediment and broken rock from dredging, components of the old wharf, and domestic and human waste.

Operation

Waste expected to be generated from the operation of the MPT includes sediment from maintenance dredging, domestic and human waste, wastewater from the fuel depot, workshop, washdown facility and ships, quarantined waste, and garbage from ships.

The waste management arrangements for all wastes involves reusing the wastes on site wherever possible. Alternatively, wastes would be sent offsite for recycling or reuse, or sent to appropriately licensed landfills.

Consideration

The EPA included a General Term of Approval requiring that the Applicant not permit or allow any waste generated outside the premises to be received at the premises for storage, treatment processing, reprocessing or waste generated at the premises to be sorted at the premises, unless permitted by an environment protection licence issued by the EPA.

Quarantine waste will be received at the MPT during operations and will be subject to disposal under Commonwealth Laws.

Conclusion

The Department is satisfied that the waste management arrangements outlined in the EIS adequately address the site's waste management issues.

6.12 HAZARDS MANAGEMENT AND RISK IMPACTS

The EIS for the proposed development did not indicate that handling or storage of any dangerous good would be undertaken on the subject development site. As such, the conclusion was drawn in the EIS that the proposal could not be considered a "potentially hazardous development", as defined by *State Environmental Planning Policy No.33 - Hazardous and Offensive Development* (SEPP 33), and there was no requirement for the preparation of a Preliminary Hazard Analysis (PHA).

Consideration

The Department initially accepted BHP's position with respect to SEPP 33, but highlighted that the operation of the proposed multi-purpose terminal would be restricted to materials not specified in the Australian Dangerous Goods Code (ie. non-dangerous goods), in accordance with the information provided in the EIS. BHP considered that such a restriction may hinder the operational flexibility of the proposed development, and therefore indicated to the Department that it would like the receipt and dispatch of dangerous goods at the terminal to be considered as part of the subject Development Application. The Department subsequently notified BHP that in accordance with the provisions of SEPP 33, handling and storage of dangerous goods at the terminal would trigger a "potentially hazardous" classification for the development and a PHA would be required.

BHP further argued that contracts for freight handling through the proposed development were yet to be established and there was no means therefore to establish the likely dangerous goods, their quantities or frequency of handling at the site. The Department discussed this matter with BHP, and a risk consultant acting on behalf of BHP, on a number of occasions. It was resolved that likely dangerous goods would be identified by examining shipping records from other port facilities in New South Wales. Based on these materials, BHP would undertake a "consequence analysis" to demonstrate that dangerous goods could be located on the site without significant off-site consequences in the event of a hazardous incident on the site. More refined data with respect to quantities and types of dangerous goods, and specification locational and handling requirements would be established during detailed design of the development, once further investigations had been contacted by BHP and the nature of shipping contracts had been determined. A "consequence analysis" was supplied to the Department

The consequence analysis identified three types of incidents as having the potential to affect receptors in the vicinity of the subject development site:

- release of class 2.3 materials (toxic gases, such as chlorine and ammonia) from both catastrophic vessel failure and vessel leaks;
- explosions, particularly Boiling Liquid Expanding Vapour Explosions (BLEVE) involving LPG; and
- fires involving pools of class 3 materials (flammable liquids).

The consequence analysis indicated that should a minor leak (5mm hole) of chlorine or ammonia occur at the development, there is no risk of fatality off-site. However, respiratory irritation from chlorine after 2 hours would be possible. It is considered highly unlikely that chlorine would leak for such an extended period. Catastrophic failure of chlorine and ammonia storage vessels carry a fatality probability of 8% and 1% respectively. As noted in the additional information, the probability of such a failure occurring is very remote. Equally, the information provided by BHP is conservative, as it considers worst case locational and meteorological situations and excludes

mitigating factors (such as shipping container and building wake effects). The Department generally concurs with the analysis of toxic gas effects presented in the consequence analysis.

BLEVE of LPG modelled in the additional information indicates that the Department's recommended criteria for radiant heat and explosion overpressure will not be exceeded at the site boundary (for both human injury and structural damage). It is noted that depending on the location of structures on the proposed development site, there is potentially for damage to structures associated with the development as a consequence of an LPG BLEVE. This issue will be addressed in the detailed design stages of the proposal, and through a Final Hazard Analysis, as required by the recommended conditions of consent. Similarly, pool fires involving flammable liquids did not pose a human fatality/ injury risk, or structural damage risk at the site boundary. Possible structural damage on-site from pool fires is most appropriately dealt with through the recommended Final Hazard Analysis and Fire Safety Study, after completion of detailed design.

The Department received no submissions from the public, councils or government agencies that raised hazards issues or risk impacts as being of concern in relation to the proposed development.

Conclusion

The Department concurs with the information provided by BHP in the consequence analysis. It has generally been demonstrated that dangerous goods can be located on the site without significant off-site impacts. However, given that BHP cannot conclusively define the maximum and likely quantities of dangerous goods to be handled, and hence cannot conclusively determine handling, location and separation requirements for such goods, a number of hazards studies have been required through the recommended instrument of consent. The most significant of these is a Final Hazard Analysis (FHA), which requires the Applicant to update the consequence analysis for the Development Application. The FHA is required to specify maximum dangerous goods quantities and mitigation measures for the approval of the Director-General. Information presented in the FHA will be used to limit dangerous goods activities on the site, consistent with the EIS and consequence analysis for the development. The FHA, in addition to the other reports and measures required under the recommended hazards conditions of consent are considered to appropriately and effectively mitigate, monitor and manage hazards issues and risk impacts associated with the proposed development.

7 SECTION 79(C) CONSIDERATION

The Department has evaluated the DA in accordance with the matters for consideration listed under Section 79(C) of the EP&A Act. Based on this evaluation, attached as Appendix A, it is considered that the merits of the proposal warrant the granting of development consent, subject to the recommended conditions of consent.

8 CONDITIONS OF CONSENT

The recommended conditions of consent, at Schedule 2 of the Instrument of Consent, contain the general terms of approval provided by the Waterways Authority, Environment Protection Authority, and Roads and Traffic Authority.

The conditions of consent also take into account the issues raised in submissions received by the community, Newcastle City Council, National Parks and Wildlife Service, Environment Protection Authority, Department of Land and Water Conservation, NSW Fisheries, Waterways Authority, Rail Access Corporation, Roads and Traffic Authority, NSW Heritage Office, Mines Subsidence Board, and Hunter Water Corporation.

The recommended conditions relate to future environmental management, monitoring and reporting of proposed activities to be undertaken on the site. The conditions specify environmental criteria to be applied to site remediation, air quality and noise generation and provide a mechanism for negotiation on future heritage interpretation of the site.

The recommended conditions has reviewed and accepted the proposed conditions.

9 CONCLUSION

The Department considers that the proposed site remediation and Multi-Purpose Terminal is consistent with State and regional planning objectives relating to employment generation, sustainable economic development, and environmental management.

It is further considered that the essential environmental issues relating to the proposal can be suitably managed such that they do not preclude the granting of development consent. It is therefore concluded that the proposal should be approved, subject to the conditions of consent designed to control and mitigate potential environmental impacts.

10 RECOMMENDATION

It is RECOMMENDED that the Minister:

(1) consider the contents of this report;

(2) grant development consent to the DA in accordance with section 80 of the Environmental Planning and Assessment Act 1979 subject to the conditions set out in Schedule 2 of the Instrument of Consent (tagged 'A');

(3) sign the Instrument of Consent (tagged 'A').

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ENDORSED:

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