SUBMISSIONS REPORT

Mayfield Site Port-Related Activities Concept Plan

December 2010

Prepared for Newcastle Ports Corporation
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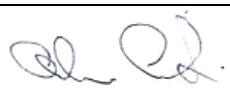
B	01-Dec-2010	Draft for Client Review	Andrew Cook Associate Director Environment	
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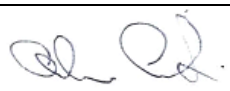
E	20-Dec-2010	Final	Andrew Cook Associate Director Environment	

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Abbreviations

AADT	Average Annual Daily Traffic
AHIMS	Aboriginal Heritage Information Management System
ALARP	As Low As Reasonably Practicable
ALCAM	Australian Level Crossing Assessment Model
AN	Ammonium nitrate
ANZECC	Australia and New Zealand Environment and Conservation Council
AQIA	Air Quality Impact Assessment
AQMPS	Air Quality Management Plans
ARI	Average Recurrence Interval
BOS	Basic Oxygen Steelmaking
CEMP	Construction Environmental Management Plan
CFC	Chlorofluorocarbon
CPCMG	Correct Planning and Consultation for Mayfield Group
CSMP	Contaminated Site Management Plan
dBA	Decibels
DECCW	Department of Environment, Climate Change and Water
DGRs	Director General's Requirements
DoP	Department of Planning
DoS	Degree of Saturation
EA	Environmental Assessment
ECRTN	Environmental Criteria For Road Traffic Noise
EIS	Environmental Impact Statement
EPA	Environment Protection Authority (NSW), now part of DECCW
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPL	Environment Protection Licence
GMP	Groundwater Monitoring Plan
HDC	Hunter Development Corporation
HAZOP	Hazard and Operability
Heritage Act	Heritage Act 1977
HIPAP	Hazardous Industry Planning Advisory Paper
Hunter Water	Hunter Water Corporation
IIP	Intertrade Industrial Park
INP	NSW Industrial Noise Policy
Koppers	Koppers Carbon Materials and Chemicals Pty Ltd

kV	Kilovolts
LATM	Local Area Traffic Management
LoS	Level of Service
Mayfield CCC	Mayfield Community Consultative Committee
NCIG	Newcastle Coal Infrastructure Group
NEPC	National Environment Protection Council
NOW	NSW Office of Water
NPC	Newcastle Port Corporation
NPWS	National Parks and Wildlife Service
NSFC	North Sydney Freight Corridor Project
NSW	New South Wales
NSW State Plan	NSW State Plan: A New Direction for NSW
OEMP	Operational Environmental Management Plan
PHA	Preliminary Hazard Analysis
PFM	Planning Focus Meeting
pmpy	Chances in a million per year
PWCS	Port Waratah Coal Services
RBL	Rating Background Level
RTA	NSW Road and Traffic Authority
SEPP 33	State Environmental Planning Policy 33 – Hazardous and Offensive Development
SIDRA	SIDRA Intersection 3.2, a computer based modelling package designed for calculating isolated intersection performance.
SMS	Stormwater Management System
SoC	Statement of Commitments
SOHI	Statement of Heritage Impact
SQUIDS	Stormwater Quality Improvement Devices
TEU	Twenty Foot Equivalent Units
TMP	Traffic Management Plan
TSP	Total Suspended Particulate
VOC	Volatile Organic Compounds
VRA	Voluntary Remediation Agreement
WMP	Waste Management Plan

1.0 Introduction and Background

1.1 Purpose

This Submissions Report relates to the Environmental Assessment (EA) titled *Mayfield Site Port-Related Activities Concept Plan* (AECOM, July 2010) prepared for the Mayfield Site Port-Related Activities Concept Plan (proposed concept) and should be read in conjunction with that document.

The purpose of this report is to detail and provide responses to submissions by private individuals, community groups, local businesses, stakeholders, and government agencies regarding the proposed concept which were received during and after the exhibition period.

1.2 The Project

Newcastle Port Corporation (NPC) has developed a Concept Plan for the proposed development of port-related activities on a portion of the former BHP Steelworks site located along the South Arm of the Hunter River in Mayfield, Newcastle. AECOM was engaged to prepare an EA to assess and document the potential environmental impacts of the proposed concept. The EA was prepared in accordance with the provisions of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), together with the Director-General's Requirements (DGRs) which were issued to NPC on 29 May 2009 by the New South Wales Department of Planning (DoP).

The BHP Steelworks site (known as the Closure Area) is made up of a 90-hectare portside portion being the site of the proposed concept, which is proposed to be developed by NPC for port-related activities, and a 60-hectare area at the rear of the site which is to be developed as the Intertrade Industrial Park (IIP). NPC is the Proponent of the proposed concept. The proposed concept identified five key land-based operational precincts which would be developed and operated through 2034. The precincts are:

- NPC Operations Precinct including office, storage sheds, vehicle and marine equipment, NPC dredging vessel, pilot cutters and helipad.
- Bulk and General Precinct capable of handling non hazardous dry bulk products including grain, briquettes, and coke cargoes.
- General Purpose Precinct a flexible facility to handle and store cargo containers, heavy machinery, Roll On Roll Off and break bulk cargo. This includes the existing general cargo facility known as Mayfield No.4 Berth.
- Container Terminal Precinct with a trade volume of 1 million twenty foot equivalent units (TEU) per annum at final development.
- Bulk Liquid Precinct used for storage, blending and distribution of high quality fuels and biofuels.

There is also a Berth Precinct proposed along the portside edge of the South Arm of the Hunter River containing seven shipping berths, one berth each for the NPC Operations, Bulk and General Precinct, and the General Purpose Precinct, three berths for the Container Terminal Precinct and one berth for the Bulk Liquid Precinct. One of the Container Terminal Precinct berths may be shared with the General Purpose Precinct. Road and rail freight infrastructure would also be required to service the site.

The proposed concept would allow reasonable flexibility for future development of the five key land-based operational precincts and berth precinct, thereby allowing the detailed plans, which would require Project Approval and further detailed assessment, to evolve over the period through 2034.

The Concept Plan establishes broad parameters and environmental performance criteria to guide future development, and would give future developers the confidence and level of certainty required to invest in port development and the more detailed Project Approval process. The Concept Plan would also provide a level of certainty for regulators and the local community that the site would be developed in a coordinated and environmentally responsible manner. Project Approval would be sought at a later date for future development applications relating to the site or individual precincts within the site. Further detailed assessments would also be undertaken on the basis of a specific project.

1.3 Environmental Assessment Exhibition

The EA was exhibited for 34 days from 4 August 2010 to 6 September 2010. A briefing session conducted by NPC outlining the proposed concept and the major findings of the EA was held at the Mayfield Sports and Recreation Club on 12 August 2010.

Exhibition of the EA was advertised in the following ways:

- Media release prior to commencement of the exhibition period.
- Advertisements in local press including The Newcastle Herald, The Post and The Star.
- A Ministerial Release and dedicated link on the NPC website about the Concept Plan.

The advertisements outlined methods for viewing the EA and providing a submission to DoP on the proposed concept.

The EA was made available for public review and/or electronic download at:

- **Department of Planning**, Information Centre, 23-33 Bridge Street, Sydney and/or online at www.planning.nsw.gov.au.
- **Nature Conservation Council of NSW**, Level 2, 5 Wilson Street, Newtown.
- **Newcastle City Council,** City Administration Centre, 282 King Street, Newcastle.
- **Newcastle Library,** War Memorial Cultural Centre, Lamen Street, Newcastle.
- **Mayfield Library,** Hanbury Street, Mayfield.
- **Stockton Library**, King Street, Stockton.

Subsequent to the exhibition period, NPC attended a community meeting organised by the Correct Planning and Consultation for Mayfield Group (CPCMG) at the Mayfield East Primary School on 25 September 2010. NPC offered a further three weeks extension for a consolidated submission from CPCMG. The NSW DoP subsequently agreed to accept the submissions made during this period.

1.4 Submissions Process

From 4 August 2010, submissions regarding the proposed concept were accepted by DoP from online, email and post sources. Submissions were given a reference number as they were received and provided to NPC in a consolidated set following the completion of the exhibition period.

1.5 Structure of Submissions Report

This Submissions Report is structured as follows:

- **Chapter 1** presents an overview of the proposed concept, the environmental assessment exhibition process and the submissions process.
- **Chapter 2** provides a table of the submissions received regarding the proposed concept, and a summary of the key issues identified from submissions received.
- **Chapter 3** provides responses to each of the key issues raised in the individual submissions received.
- **Chapter 4** provides the Final Statement of Commitments.

2.0 Response to Issues

2.1 Respondents

NPC received a total of 177 submissions in response to exhibition of the EA comprising seven from government agencies, one from Newcastle City Council, and the remainder from the community and stakeholders. Submissions included two proforma letters, of which 71 and 59 individuals made submissions, respectively.

A summary of submissions received, the DoP allocated reference numbers, and section of this Submissions Report that the issues are addressed in are outlined in **Table 2-1**.

Table 2-1 Summary of Submissions Received

Respondent	DoP Submission Number	Section of this Report where Issues are Addressed
Government Agencies		
Department of Climate Change and Water	63	3.2.5, 3.5.2, 3.5.3, 3.5.4, 3.5.5, 3.6.2, 3.6.3, 3.7.1, 3.8.2, 3.8.3, 3.8.4, 3.9.2, 3.11.1, 3.16.1
NSW Maritime	4	No comments
NSW Transport	61	3.2.1, 3.2.4, 3.4.1, 3.4.3
NSW Office of Water	64	3.8.1, 3.8.5, 3.11.1
NSW Heritage Council	2	3.9.1
NSW Roads and Traffic Authority	3	3.4.2, 3.4.4, 3.4.5, 3.15.1
NSW Industry and Investment	57	3.8.5
Local Council		
Newcastle City Council	62	3.2.1, 3.2.4, 3.2.5, 3.4.1, 3.4.2, 3.4.3, 3.4.6, 3.5.3, 3.8.5, 3.10.1, 3.11.1, 3.15.1, 3.16.1
Business		
Hunter Development Corporation	7	3.2.4, 3.15.1
Hunter Business Chamber	56	3.2.3, 3.2.4, 3.4.3
Hunter Regional Development Committee	92	3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.7.1, 3.15.1
OneSteel	23	3.3.3, 3.4.2, 3.4.6, 3.7.1, 3.10.1, 3.11.1, 3.15.1
Buildev Intertrade Consortium	31	3.2.4, 3.3.3, 3.4.2, 3.4.3, 3.4.4, 3.4.5, 3.4.6, 3.5.2, 3.6.2, 3.10.1, 3.10.2, 3.13.1
Port Waratah Coal Services	177	3.3.1, 3.3.3, 3.4.2, 3.4.3, 3.5.1, 3.6.1, 3.8.3, 3.15.1
Individual Respondents		
J. and R. Hayes	1a	3.1.1, 3.3.1, 3.4.2, 3.15.1
J. Hayes	1b	3.1.1, 3.3.1
A. Crick	5	3.1.1, 3.3.1, 3.5.1, 3.5.2, 3.5.5

E. Southgate	6	3.3.1, 3.12.1
M. Stamp	8	3.5.3
P. Dwyer	10	3.3.1
N. Marquet	11	3.3.1, 3.4.2, 3.4.3, 3.15.1
R. Miller	14	3.3.1, 3.15.1
R. Hancock	17	3.3.1, 3.4.2
K. Conner	18	3.4.2, 3.4.4, 3.5.1, 3.6.1
A. Low	19	3.3.1
R. Banyard	20	3.2.4, 3.3.1, 3.3.2, 3.4.1, 3.4.2, 3.4.3, 3.7.1, 3.10.2, 3.12.2, 3.15.1
G. Townsend	22	3.2.2, 3.2.4, 3.3.1, 3.4.3, 3.12.1
P. Hay	26	3.3.1, 3.4.2, 3.4.3, 3.12.1
J. Sutton	27	3.3.1, 3.4.1, 3.12.1, 3.15.1
G. Cameron	29	3.1.1, 3.3.1, 3.4.2
Mayfield East Action Group A. Holbrook	30	3.1.1, 3.1.2, 3.2.3, 3.3.1, 3.4.2, 3.4.4, 3.4.5, 3.5.1, 3.5.2, 3.5.4, 3.12.1, 3.12.3, 3.15.1
A. Wallington	89	3.4.5, 3.4.6, 3.5.3, 3.6.1, 3.6.3, 3.12.1, 3.12.3, 3.14.1
F. Banyard	93	3.2.4, 3.3.1, 3.4.2, 3.4.3, 3.4.4, 3.12.1
Parents and Citizens Association of Mayfield East Public School M. Smith, S. Wilks, K. Sachs and S. Clarke	95	3.3.1, 3.4.2, 3.4.4, 3.4.5, 3.5.1, 3.6.1
R. Manion	98	3.4.2, 3.4.5, 3.5.3
Islington Village Community Group P. McBain	99	3.2.4, 3.3.1, 3.4.2, 3.4.3, 3.5.1, 3.7.1
R. Ferguson and C. Hogue	101	3.2.3, 3.3.1, 3.4.4
G. Townsend	103	3.2.4, 3.4.3
Great Lifestyle Wickham	104	3.4.2, 3.4.4
J. Hayes	105	3.3.1
C. Charles and A. Parker	106	3.4.2, 3.4.4, 3.4.5
R. Bulley	114	3.3.1, 3.4.5, 3.5.1, 3.5.4, 3.6.1, 3.12.1, 3.15.1
G. Stuart	116	3.3.1, 3.4.2, 3.4.4, 3.16.1

Form Responses		
Proforma Response 1	12, 13, 15, 21, 24, 25, 28, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 58, 59, 60, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 102, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132	3.1.1, 3.1.2, 3.3.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5, 3.5.1, 3.6.3, 3.12.1, 3.13.1
Proforma Response 2	94, 96, 97, 100, 107, 108, 111, 112, 113, 115, 117, 118, 119, 120, 121, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176	3.1.1, 3.2.4, 3.3.1, 3.4.2, 3.4.4, 3.4.5, 3.12.1

Some proforma responses included one line additions to the proforma letter submission. These issues have been considered in preparing the Submissions Report. Where key issues were raised, responses to these additional issues have been incorporated into the Submissions Report and a reference to where the response is provided has been included in **Table 2-1** in the applicable proforma response row.

Responses have not been provided for the following four submissions:

- Submission 9 did not relate to the proposed concept but to the M2 motorway;
- Submission 16 was an email to the DoP stating that a submission would follow by post; and
- Submissions 109 and 110 were cover letters for the two Form Responses.

2.2 Overview of the Issues Raised

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. Where similar issues have been raised in different submissions, one overall response has been provided.

Seven government agencies and Newcastle City Council provided submissions, covering a range of issues relevant to their areas of responsibility. In a letter dated 2 September 2010 accepted by the DoP as a submission, NSW Maritime indicated that they did not intend on making a submission at this time.

Community submissions reflected the priorities and concerns of residents in the local and surrounding area, local business, and local groups with social, economic and environmental interests.

A summary of the key issues from government agencies, local councils and the community is provided below.

Consultation

- Concerns were raised regarding the adequacy of the community consultation carried out for the proposed concept. Most residents stated they were not aware of the Mayfield Community Consultative Committee (Mayfield CCC) and alleged consultation undertaken through this committee should not be deemed representative of the community.
- Stakeholders, such as Buildev Intertrade Consortium (responsible for development of the adjacent future IIP for port-related uses) and OneSteel, made requests for ongoing consultation throughout the Concept Plan period, including detailed consultation in regard to future Project applications.

Traffic

- Concern that the trip generation rate of two containers per truck used for the proposed concept may result in an under estimation of the traffic impacts associated with the proposal.
- Concern that an existing study (*Traffic Impact Study for the Interim Port Side Industrial Development* prepared by Better Transport Futures and Mark Waugh Pty Ltd in June 2008) which was used as a source of baseline data had calculation errors, which resulted in the underestimation of traffic flows at the intersection of Industrial Drive and George Street by approximately 25 per cent.
- Concern that the growth rate adopted for the assessment of the performance of the road network in the future is too low. It is recommended that a growth rate of 1 or 2 percent per annum be adopted for the analysis.
- Concern that the default SIDRA settings, used to calculate queue lengths, of 7 metres per car and 13 metres per truck may have been adopted. Given the potential for long queue lengths, it is critical that the correct truck length is used in the model to assess traffic impact and queues generated by the proposal.
- Concern that the Transport Assessment focuses only on the points of access and egress to and from the site and not on the wider road network.
- In relation to the assessment of the relationship between road and rail movements the following issues have been raised:
    - The interaction between rail and vehicular traffic has not been adequately addressed.
    - The impact that additional trains would have on local traffic at level crossings was not adequately addressed.
    - There is likely to be a significant impact on the Selwyn Street level crossing as the trains are being prepared for departure.

Rail

- Concern that the assumption that four train paths are currently available on the Newcastle-Sydney rail corridor to accommodate initial rail movements may not be correct.
- Concern regarding the status of the Northern Sydney Freight Corridor (NSFC) Project and reliance on that project to accommodate future rail movements associated with the concept plan.
- Recommended that the efficiency of the rail operation be maximised by operating maximum length trains that are able to be accommodated on the rail corridor. This would necessitate longer sidings and a longer exit road on the site. Use of Broadmeadow Yard to consolidate trains into the maximum length is not supported by RailCorp.
- Concern that the configuration of the rail facilities for the proposed concept plan are sub-optimal for a modern rail terminal. Consideration should be given to a revised configuration that allows efficient uni-directional operation of maximum length trains with shunting minimised.
- Concern raised over the lack of alternatives considered for the development of rail services, and that the proposed concept relies heavily on road transport. It was raised that the EA did not provide adequate justification for the perceived inability of the site to accommodate rail services.
- Recommendation that the proposed concept should only proceed with greater rail access.
- Recommendation that the rail mode share needs to be reassessed in conjunction with Transport NSW who is currently preparing the *NSW Freight Strategy* to investigate the rail mode share target for containers out of the Port.

Noise

- Suggestion that Stockton should be categorised as “Suburban” instead of “Urban” for the purposes of developing project-specific noise criteria.
- Concern over the predicted exceedances of the noise criteria during the night period at Crebert Street, Mayfield and Stockton.
- Concern regarding the impact of increased noise levels on school children and community members.
- Concern that the increased number of truck movements and associated noise (i.e. from compression braking) would seriously impact the quality of life in the area.

Cumulative Impacts

- Concern that an adequate assessment of the proposed concept is difficult without a more detailed assessment of the cumulative impacts from the proposed concept and the future IIP. Concern relates primarily to cumulative impacts associated with traffic, noise and air quality.

Other issues

Other issues raised in submissions related to air quality, hazard and risk, water management, heritage, infrastructure, geology and soils, socio-economic, visual, and sustainability. Detailed issues and responses to these areas of concern have been addressed in **Section 3** of this Submissions Report.

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3.0 Issues and Responses

3.1 Process

3.1.1 Exhibition Period

Submission Numbers

1a, 1b, 5, 29, 30, 32, 94, 96, 97, 100, 107, 108, 111, 112, 113, 117, 118, 119, 120, 121, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176

Summary of Issue

The following issue was raised by respondents:

a) Concerns were raised by the community about the level of consultation prior to public exhibition, and regarding the timeframe in which a response could be submitted.

Response

a) Refer to the response provided in **Section 3.3.1 (a)** of this Submissions Report relating to the level of community consultation. Requests were made, and granted by the DoP to extend the timeframe for lodgement of submissions. The timeframe for exhibition was not increased by the DoP. However, submissions numbered 92 to 177 were received during the extended submission period and are addressed in this Submissions Report.

3.1.2 Procedure

Submission Numbers

25, 30, 78

Summary of Issues

The following issues were raised by respondents:

a) DoP should have identified inadequacies in the EA prior to public exhibition. Request an explanation as to why deficiencies in the EA were not identified during the adequacy review and why the proponent was not required to meet the requirements of the DGRs prior to public exhibition. Deficiencies raised included:
   - The general lack of consultation with the community.
   - The inclusion of an assessment of the frequency of worst-case meteorological conditions for the noise modelling as required under the *NSW Industrial Noise Policy* (INP) referred to in the DGRs.
   - Provision of an adequate assessment of alternative precinct layouts.

b) Recommended that the EA be referred to the Planning and Assessment Commission due to an inadequate justification for the reliance on road transport. Belief that DoP has failed to prove its impartiality as significant deficiencies in this regard were not addressed prior to public exhibition. Further consideration of the proposed concept needs to be overseen or audited by an independent body.

Response

a) The DoP issued a letter to NPC dated 14 January 2010 which detailed each issue of the Draft EA that was deemed not to adequately address the DGRs, which included input from relevant government agencies. NPC understands that the DoP letter included input from some government agencies. The EA was updated to further clarify and assess the issues raised in the Adequacy Review. A second review was then carried out by the DoP to confirm the revised EA addressed all issues raised in the 14 January 2010 letter. The DoP subsequently deemed the revised EA adequate to go on public exhibition.

   Responses to the individual issues highlighted by submissions 25, 30 and 78 are provided below.

   General lack of consultation with the community

   The level of consultation conducted was deemed by the DoP to adequately address the DGRs. Refer to the response provided in **Section 3.3.1 (a)** of this Submissions Report relating to the level of community consultation conducted.

Inclusion of an assessment of the frequency of worst-case meteorological conditions for the noise modelling as required under the Industrial Noise Policy referred to in the DGRs

Refer to the response provided in **Section 3.5.2 (f)** of this Submissions Report.

Provision of an adequate assessment of alternative precinct layouts

DoP requested that the Final EA demonstrate how the proposed layout provides an optimal outcome for the environment and/or achieving the outcomes of the concept plan. The Draft EA was amended to include a description of the process undertaken by NPC to address this requirement.

The process undertaken by NPC is outlined in Section 4.4 of the EA and summarised below, which was subsequently deemed to adequately address the DGRs by the DoP.

Various layouts were considered by NPC, however, preliminary designs suitable for public exhibition were not produced or required during the process of determining the optimum precinct layout. The proposed concepts precinct layout process required consideration of a range of Port planning issues, opportunities and constraints. Key considerations and constraints, and how they influenced the precinct layouts and the proposed concept, were described under the following sub-headings:

- **State Policies and Plans** including the *NSW State Plan*, *NSW Ports Growth Plan* and the *State Infrastructure Policy*.
- **Regional Policies and Plans** including the *Lower Hunter Regional Strategy*.
- **Trade forecasts** which identified the need to provide long-term capacity at NSW ports for containers, bulk goods and general cargo. In addition to trade forecasts, consideration was given to operators of bulk dry and bulk liquid facilities that approached NPC and demonstrated a need for a Bulk and General Precinct and a Bulk Liquid Precinct.
- **Dimensions of the site** were considered in determining the optimal location for the precincts. For example, the central portion of the site was determined to be suitable for the Container Terminal Precinct which ideally requires a regular square or rectangular shape and a depth of approximately 400 metres for optimal operations.
- **Availability of rail infrastructure** was considered in determining the location of precincts. The Bulk and General, General Purpose and Container Terminal Precincts all require access to rail infrastructure. The central portion of the site is best suited to the provision of rail sidings which require long, straight areas of land and therefore this was an important consideration in citing the three precincts in the centre of the site that would utilise rail.
- **Land use within and surrounding the site** including the location of the future IIP to the west, nearby residential areas to the south west, and existing development which has occurred in accordance with the 2001 consent were important considerations in determining the precinct layout. For example, the boundary of the General Purpose Precinct was selected to align with the existing general cargo handling facility known as Mayfield No. 4 Berth which was approved under the 2001 consent.
- **Interaction between precincts**, which was primarily considered in relation to consultation advice and the Preliminary Hazard Analysis (PHA). Key constraints such as the potential for accumulation of risk and the overall risk profile of the site were considered to provide a precinct layout sufficient to allow the Dangerous Goods storage areas sufficient separation from storage areas in adjacent precincts.
- **Needs of Potential Future Operators** were considered. NPC liaised with potential operators of terminal facilities regarding their operational requirements.

b) Refer to **Section 3.4.4** of this Submissions Report for justification of the road and rail transportation modal split. There is no statutory requirement for a Planning and Assessment Commission hearing in relation to the proposed concept.

3.2 Project

3.2.1 Statutory Planning

Submission Numbers

61, 62

Summary of Issues

The following issues were raised by respondents:

a) NSW Maritime is currently updating the *NSW Ports Growth Plan*. Given the substantial nature of the proposed concept, it was recommended that the port facilities at Newcastle should be consistent with this revised document.

b) The EA fails to address payment to Council of appropriate Section 94A contributions. Request made that the current proponent or proponents of individual developments be required to make full payment of their respective contributions in accordance with Council's adopted *Section 94A Development Contribution Plan 2006*.

Response

a) The DGRs requested that the EA assess the consistency of the proposed concept with the aims and objectives of relevant State policies and plans, including the *NSW Ports Growth Plan 2003.*

Section 3.1 of the EA considered the consistency of the proposed concept with the *NSW Ports Growth Plan 2003*, and concluded that by developing the site for port related industrial uses, long-term capacity for handling containers, bulk goods and general cargo would be provided which would enhance the economic efficiency of the NSW port system. To this end, the proposed concept is consistent with the *NSW Ports Growth Plan 2003*.

Project applicants would likely be required by subsequent project-specific DGRs to assess each project against State policies and plans current at the time of application. This may include taking into consideration any revised *NSW Ports Growth Plan* should one be published.

It should be noted that there is currently no revised *NSW Ports Growth Plan* available (confirmed during a teleconference with NSW Maritime on 18 December 2010) and neither is there any information available on the NSW Maritime website relating to update of the *NSW Ports Growth Plan*.

b) It is important that the Concept Plan establishes a mechanism to identify the key infrastructure upgrades required to support the development over the extended timeframe of the project and to ensure that the infrastructure upgrades are appropriately funded and provided in a timely and equitable manner. Given the strategic significance of the portside land at Mayfield and adjoining land parcels such as IIP, and given that some of the infrastructure that requires upgrading is managed by agencies other than Council (eg. RTA, Hunter Water, Transport NSW), the use of Section 94A development contributions is not considered to be the most appropriate mechanism in this instance.

It is appropriate to prepare a Strategic Infrastructure Plan to ensure the provision of key infrastructure to the site including upgrades to roads, key intersections, rail infrastructure and utility services. The Strategic Infrastructure Plan could:

- Identify and cost the key infrastructure upgrades to be provided;
- Establish equitable contributions from developers and relevant government agencies (as appropriate) toward the cost;
- Detail how the contributions would be administered by relevant government agencies; and
- Ensure the provision of the infrastructure in a timely manner that responds appropriately to an identified need.

A Strategic Infrastructure Plan would ensure that there is a more strategic approach to the identification, funding, timing and provision of key infrastructure to support the development of not just the Concept Plan, but the locality generally. The Strategic Infrastructure Plan should include the future development of key adjoining sites such as IIP, but only when the details of such proposed development and the associated environmental impacts are sufficiently known (which is not the case currently).

It is not appropriate to assess infrastructure contributions as part of a Concept Plan application as the need for contributions can be more effectively calculated when further project detail is known at the project application stage. Accordingly the Strategic Infrastructure Plan would need to be prepared prior to the approval of future project applications but only where such applications trigger the need for infrastructure upgrades. Contributions would therefore be payable in accordance with the Strategic Infrastructure Plan as part of these individual project applications.

Triggers for the provision of infrastructure upgrades have been identified by environmental performance criteria in the Concept Plan EA such as traffic volumes, intersection performance, train services per day etc. The Infrastructure Plan would also establish a framework to ensure that regular monitoring of key environmental performance criteria (eg. traffic volume counts) was undertaken progressively over the life of the Concept Plan and adjoining development. This monitoring would help to identify when trigger levels are likely to be reached or exceeded.

3.2.2 Need and Justification

Submission Numbers

22

Summary of Issue

The following issue was raised by respondents:

a) Questioned the justification to develop another bulk liquids terminal when there are already three in close proximity to the site.

Response

a) Justification for development of a Bulk Liquids Precinct specifically is provided in Section 3.2.2 of the EA.

There are seven major oil refineries in Australia operated by the four major oil companies BP, Caltex, Mobil and Shell. Distribution of bulk fuel from the refineries is typically by ship. Refinery production is anticipated to increase by some 1.3 percent per year whilst the consumption of crude oil and its products is expected to increase by around 1.4 percent per year (Australian Bureau of Agriculture and Resource Economics, 2005).

The Lower Hunter Region is the sixth largest urban area in Australia and one of NSW major centres of economic activity indicating high demands for fuels that, based on predictions of the Australian Bureau of Agriculture and Resource Economics, are unlikely to slow.

The Port of Newcastle currently handles only a small volume of bulk liquids, and existing practices of delivering fuels to the Hunter Region by road and pipeline from Sydney are limited in capacity and cost. Existing bulk liquids facilities in Newcastle and the respective 2009/2010 product and volumes include:

- Dyke 1 (BP) handles 376,175 tonnes of fuel per annum.
- Koppers Pipeline handles 276,923 tonnes of tar/pitch per annum.
- K2 handles 62,751 tonnes of vegetable oil per annum.
- K3 handles 3,733 tonnes of sulphuric acid per annum.

In addition, the proposed concept would aid in the delivery of national objectives in relation to biofuels (set out in the *Biofuels Action Plan* (BR&Di, 2008)) through the provision of a bulk liquids facility suitable to store, blend, and distribute biofuels, thereby improving the national volume and accessibility to the product.

3.2.3 Alternatives Considered

Submission Numbers

30, 56, 101

Summary of Issues

The following issues were raised by respondents:

a) Concerns were raised over the lack of alternatives considered for the development of rail services. The proposed concept relies heavily on road transport without providing justification for the perceived inability of the site to accommodate rail services.

b) The EA does not provide an assessment of alternative precinct layouts as required by the DGRs.

c) It was recommended that alternatives considered for the proposed concept should evaluate the potential for upgrading the operations associated with the bulk and general cargo handling at Kooragang Island rather than Mayfield. Kooragang Island already has an established bulk freight industry which has reached capacity. Investment at Kooragang Island would resolve this issue and achieve greater efficiency than operating from two sites.

Response

a) At the outset, it should be noted that the proposed rail alignment as shown in the Concept Plan has already been approved as part of the 2001 consent for the Mayfield multi-purpose terminal. This approved rail alignment has also been subsequently altered as part of approved modifications to the 2001 consent.

The proposed rail alignment as shown in the Concept Plan has been designed to address a number of constraints including:

- The limited area, shape and irregular site boundaries of the NPC land.
- The need to avoid undue fragmentation of the site by locating the rail line as close as possible to the landward extremity of the site (southern and western site boundaries).
- The proposed precinct layout and in particular the location of the container and general purpose precincts which will rely most heavily on access to the rail sidings for loading/unloading.
- The limited area of the site available for location of rail sidings (between the new road/rail crossing to the west and the curvature of the rail line to the east). This reduces the length of sidings and as a result the length of trains able to access the site.
- The assumed use of reach stackers for loading/unloading of cargo from the rail sidings during initial operations. The use of reach stackers will effectively limit the number of rail sidings to no more than two and hence the length of trains that can access the NPC site. Reach stackers are more economic for smaller scale port operations by comparison to other alternatives (e.g. Gantries) which are more likely to be used as Concept Plan operations, and more particularly container operations, scale up over time.
- The need to incorporate a significant curve in the track alignment to connect the rail line within the site back to the Morandoo Sidings.
- The potential to allow for future development of the IIP site in a compatible manner including allowing for potential access to the rail line as shown on the draft Master Plan for the IIP site (2008).
- The need to provide continued rail access to the adjoining OneSteel site.

As discussed above, the length of trains are also restricted by the limited length and number of sidings provided on the NPC site to accommodate initial rail operations.

Having noted the various site and regional rail network constraints which have influenced the Concept Plan, there remains significant potential to improve the rail operations and rail capacity to/from the site over the life of the Concept Plan and particularly in a medium/long term timeframe. The potential improvements include:

- Development of the rail exit road which connects back to the Bullock Island loop. The exit road will avoid the inefficient operation which involves trains exiting the site by travelling back over the Selwyn Street crossing and into the Morandoo Yard, before exiting in the other direction via the Bullock Island loop. It is recommended that the exit road be installed by the time Concept Plan operations reach two trains per day.
- By installing the exit road there is the potential to extend the length of the rail sidings within the NPC site thereby allowing longer trains with larger capacity to service the port.
- The installation of gantries for the loading/unloading of cargo which, although expensive, will improve the efficiency and overall capacity of the port and the associated rail operations in the medium/long term. Use of gantries will also allow additional rail sidings to be developed. This is by comparison to the reach stacker operations which are assumed for Concept Plan operations in the short/medium term.
- The development of the adjoining future IIP site in a compatible manner with the Concept Plan. This could possibly include development of additional rail sidings or the extension of a rail line through the IIP site to connect with the rail line shown on the Concept Plan thereby completing a rail loop which would further improve the efficiency and capacity of the port and rail operations. However, these improvements are outside the scope of this Concept Plan and not within NPC's power to deliver.

The ability to improve the efficiency and capacity of rail operations to/from the port will also need to be linked carefully to the staged implementation of improvements to the regional rail network as proposed by the

NSFC. There are currently a number of significant constraints relating to the capacity of the Main North Line between Sydney and Newcastle including the number of available train paths, the limitations on freight train movements during defined periods of the day and the limitations on the lengths of freight trains able to use this line because of grade issues.

On this basis the NSW Government has recognised the NSFC project as a priority transport project and has sought federal funding for its implementation through a recent Updated Submission to Infrastructure Australia dated July 2010. Key details of the NSFC project are summarised in **Table 3.1** below.

Table 3-1 Summary of North Sydney Freight Corridor Project - Staging

Project Staging and Status	Summary of Proposed Works	Estimated Increase in Capacity	Estimated Timing	Estimated Cost
Stage 1 – Ready to Proceed	Signalling enhancements; Passing loops at Hexham, Islington and Gosford North; 3rd track Epping to Thornleigh; Rail underpass at North Strathfield.	Increase from 16 to 26 freight trains per day (each way) Sufficient to meet anticipated capacity thru till 2021.	2015	$1,234 million
Stage 2 - Threshold	Signalling enhancements; Hornsby freight bypass; 3rd track Rhodes to West Ryde; 3rd track Thornleigh to Hornsby; 3rd track Berowra to Hawkesbury River	Increase in freight capacity by a further 50% over Stage 1. Sufficient to meet anticipated capacity thru till 2030.	2018	$3.447 million
Stage 3 - Threshold	Signalling enhancements; Passing loops at Wyong; 4th track North Strathfield to Epping, 4th track Epping to Hornsby; 3rd track Hornsby to Berowra Modify train turnaround at Epping; Strathfield Junction passenger underpass.	Sufficient to meet anticipated capacity beyond 2038.	2024	$3.252 million

It is noted that the forecast freight demand in the Infrastructure Australia Updated Submission did not make any allowance for rail freight transport from the Port of Newcastle until 2020. This assumption was based on outdated information which has since been superseded by the Concept Plan application.

Based on the latest available information as contained in the Updated Submission by the NSW Government to Infrastructure Australia dated July 2010 and summarised in **Table 3-1** above, it seems that there is reasonable alignment between the proposed timetable for implementation of the NSFC project and the timeframe for development of the Concept Plan over the period through to 2034. The following points are noted:

- Stage 1 of the NSFC project is anticipated for completion by 2015 which is within the early stages of anticipated development of the Concept Plan.
- Stage 2 of the NSFC project is anticipated for completion by 2018 which is well before the Concept Plan initial operations scenario is to be reached in 2024.
- Stage 3 of the NSFC project is anticipated for completion by 2024 which is well before the Concept Plan final operations scenario is to be reached in 2034.

On this basis the key issue in relation to capacity of the regional rail network will be the potential development of the Concept Plan in the short/medium term i.e. prior to anticipated completion of Stage 1 of the NSFC project in 2015. In this period there will continue to be limited freight train paths available on the Main North Line to service the port. It is worth noting that Stage 1 of the NFSC Project is also planned to accommodate the increase in traffic expected on the Inter-city route.

One factor that might change this set up, is the fact that much of the goods exported from the Hunter region are taken to Botany by train (wool, wine etc), and are therefore using up train paths that could be freed up by the development of the port side land at Mayfield and the export of this regional product through Newcastle

Port rather than Port Botany. This would potentially free up some capacity on the Main North Line for other freight to be hauled to Sydney.

As a result there may need to be a greater reliance on road transport in this initial period of the Concept Plan to move goods to/from the port. The revised Transport Assessment prepared by AECOM and dated December 2010 (refer to **Appendix A** of this Submissions Report) demonstrates that there is adequate capacity on the arterial road network and at the two key intersections on Industrial Drive (George Street and Ingall Street) to service the additional traffic generated by the Concept Plan in 2024 with only relatively minor mitigation measures required.

This provides a level of confidence that the road network can accommodate a greater reliance on road transport in the initial period of the Concept Plan while Stage 1 of the NSFC project is completed. However, traffic levels will need to be regularly monitored to ensure the threshold levels identified in the EA are exceeded. After this date there should be no significant impediment on the regional rail network to achieving the forecast modal split to rail (20 percent) or possibly to exceed it over time.

It is appropriate for there to be on-going discussions between NPC, Transport NSW, ARTC and Railcorp to ensure that the staging of the NSFC project is aligned as far as practicable with the anticipated development of the portside land at Mayfield over the timeframe of the Concept Plan but in the period through to 2024 in particular.

b) Refer to the response provided in **Section 3.1.2 (a)** of this Submissions Report.

c) Alternative Port of Newcastle sites, including Kooragang Island, were considered and addressed in Section 4.2 of the EA. Kooragang Island is the largest inland port area and has been earmarked by NPC for expansion of coal terminals and a large proportion of the land has been designated to this function. Therefore, Kooragang Island would not be suitable for development of a container terminal or for handling other types of bulk goods and general cargo.

3.2.4 Design

Submission Numbers

7, 20, 22, 31, 56, 61, 62, 93, 94, 96, 97, 99, 100, 103, 107, 108, 111, 112, 113, 115, 117, 118, 119, 120, 121, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176

Summary of Issues

The following issues were raised by respondents:

a) Issues were raised regarding the rail design for the proposed concept. Submissions included the following suggestions:

- New transport infrastructure, such as a new rail line, should be provided in order to accommodate the proposed concept.
- A rail terminal facility should be built. Rail could be used to shuttle containers between the terminal facility and the proposed concept. RailCorp do not support the use of Broadmeadow Yard or any other part of the RailCorp network for this purpose.
- The configuration of the rail facilities for the proposed concept is sub-optimal for a modern rail terminal. The short sidings and subsequent reliance on shunting is inefficient. The proposed short siding length, combined with the requirement to continually break down and shunt trains, makes for an inefficient rail solution. Consideration should be given to reconfiguration of the rail facilities.
- In consideration to impacts of haulage to and from the proposed concept, it is recommended that the transport assessment should give regard to the potential rail freight corridor identified in the *Freight Hub Hunter Part 1 – Executive Summary Report (DoP, 2008)*.
- A rail service to Cardiff-Glendale linking with a north-south rail line using the Ulan line to transport inland would be more efficient and less intrusive on local communities.
- There is a need to integrate the rail operations at the site with the intermodal terminal proposed for the IIP.
- There is the potential for problems to occur with trains leaving the site towards the Morandoo sidings against the current flow of trains.

- Request for an explanation as to why the Selwyn Street rail connection should be used given that the line currently has considerable complaints from residents as the line travels through residential areas. Suggestion that the rail instead be connected to the Coal line at Sandgate.
- The assumption that the OneSteel rail line would be available for the breaking down of trains may not be correct.

b) The link between the internal rail sidings and the Bullock Island Loop via the future rail exit road would result in a triangle of land inside the tracks, between the proposed access road of the Bulk and General Precinct and Selwyn Street, becoming sterilised from commercial activity.

c) The longer arm of the Proposed Access Corridor is part of Lot 1 which is under the control and management of Hunter Development Corporation (HDC) to which Buildev Intertrade Consortium have development rights and obligations. Those obligations include providing an industrial grade suitably serviced road. The shorter arm is not on the same title as the rest of the site. Opening of this access corridor is not planned to occur in the initial stages of the IIP development. When development does occur, significant civil construction works would be undertaken and the corridor would likely be closed for the duration of these works. This would impact on access to the proposed concept site and there would need to be a plan in place for alternative access arrangements during this period.

d) The EA only discusses minor road works on Selwyn Street. There is no information about works required for other site entry points.

e) No timeframe for construction of the internal link road has been provided in the EA. Concern raised that there was no commitment to the construction of the road, or assigning of responsibility for the future ownership of the road outlined. It is not clear in the EA who would be responsible for future upgrades and any potential grade separation of road and rail transport and how any cost sharing would work.

f) Suggestion that the heavy transport road that runs from the site through to Tourle Street be utilised for truck movements and queuing of vehicles.

g) Local Area Traffic Management (LATM) would be required for road works. Assurance is sought that NPC would commit to providing LATM controls or that funding would be provided to Council for these works.

h) Commented that neither Selwyn Street or Ingall Street currently provide a suitable configuration to accommodate alternative transport modes, such as walking, cycling or public transport. It was recommended that NPC upgrade or reconstruct Selwyn Street and Ingall Street to accommodate these alternative transport modes to Newcastle City Council specifications.

Response

a) Consideration of rail infrastructure investment outside the immediate area of the port land at Mayfield is outside the remit of this Concept Plan and the EA. The EA clearly states that access to the site is limited because of a limit in the number of available freight paths on the Main North Line. Answering each bullet point specifically:

- The proposed rail alignment is approved under the 2001 consent. Provision of new rail infrastructure such as a new rail line is outside the scope of this EA and is not required to service the port. The EA assumes that the NSFC project will proceed in the timeframes envisaged by the NSW Government as outlined above and therefore additional freight paths will become available to the site by 2015 The responsibility for providing this regional rail infrastructure rests with Transport NSW. To date, Infrastructure Australia has set aside sufficient funding for the first stage of this project to go ahead. In Stage 1 of the NSFC project the upgrades have been specifically chosen to deliver the maximum number of new freight train paths for the available funding. While some of these new paths will be allocated to intercity services between Brisbane and Sydney, there will still be a small number of additional paths available per day that could service the Mayfield site.
- While the development of a rail terminal facility to shuttle containers to/from the port may have some merit, it is outside the scope of this EA and would require acquisition of land outside the Port area, separate environmental approval and further investigation.
- The proposed configuration of the rail facilities is as approved and recently modified under the 2001 consent. There are a number of constraints which impact on the layout and operation of the rail facilities and these are discussed in **Section 3.2.3(a)** of this Submissions Report. There is potential to upgrade the rail operation by installing an exit road, extending the length and/or number of sidings, installing gantries and creating a rail loop connection via the IIP site. The proposed configuration of the rail facilities as shown on the Concept Plan does not preclude any of these improvements.

- The development of a rail freight hub and Intermodal near Maitland would be a welcome driver for the promotion of trade in the region. This would complement the development of a container terminal at Mayfield, and could also help to free up paths on the Main North Line to Sydney (by allowing Hunter Region goods to be exported via Mayfield) as discussed earlier. This also has the potential to reduce the number of truck movements to the port by allowing an interchange from truck to rail to happen outside of Newcastle urban area. However, development of an intermodal facility is outside the scope of the Concept Plan and the EA.
- It is assumed that this refers to the Hexham to Fassifern Bypass. Completion of this bypass will allow intercity trains to be re-routed around Newcastle, freeing up train path capacity in the local area of Newcastle. This capacity increase will support the introduction of more trains from the Hunter Region to be taken into the port by freeing up paths from Hexham to Islington. However, it will not create extra train paths between the Port of Newcastle and Sydney. This project is outside the scope of the Concept Plan and the EA.
- It is assumed the submission is suggesting that freight be rerouted from Mayfield to Cardiff, then north via the new Hexham to Fassifern link onto the main Hunter Valley Coal lines and then be taken out west via the Ulan line to the old Kandos to Gulgong line. From there the freight would be routed south to Lithgow, and east over the Blue Mountains into Sydney. This equates to an increase in the journey length from 180 to 700 kilometres. This option is not considered to be feasible from an economic and operational perspective and is outside the scope of the Concept Plan and the EA.
- NPC agrees that it is desirable to integrate the proposed rail operations for the Concept Plan with the intermodal facility proposed for the IIP site as shown on the draft Master Plan 2008. Importantly the layout of the rail line and associated rail facilities as shown on the Concept Plan are entirely compatible with this objective. However, NPC has no direct control over this part of the IIP site and it is unclear as to what Buildev intentions are for the development of this part of the IIP site going forward.
- The proposed operation of trains leaving the Mayfield site towards the Morandoo Sidings is not ideal but can be managed if appropriate scheduling and signalling of train movements occurs to avoid potential conflict. Trains will be moving at slow speeds and under supervision of the operator of the rail yard. This arrangement will only occur in the early stages of the Concept Plan and once rail operations reach two trains per day then it is recommended that a new exit road be installed providing a more direct and efficient connection for trains leaving the site to the Bullock Island loop;
- Use of the Selwyn Street rail line is the most logical point to connect the site to the existing local rail network and this connection has already been approved by the 2001 consent. The noise assessment in the EA did not identify any specific concerns associated with rail noise at the worst case sensitive receivers in Mayfield and the Concept Plan is only proposing an additional four trains per day to service the port in 2034. Connecting the NPC site at Mayfield to the coal line at Sandgate, as an alternative to the proposed connection to the Morandoo Sidings, is not considered to be a viable alternative. This would require a rail line extending some 3.5 kilometres to the west through multiple land holdings and over/under Tourle Street. In addition any new rail connection to the existing coal rail line which services Kooragang Island would in all likelihood be strongly opposed by a range of parties including ARTC, Port Waratah Coal Services (PWCS) and Newcastle Coal Infrastructure Group (NCIG) as it would potentially impact on the operation of coal trains to Kooragang Island and the reliability and capacity of the coal chain.
- It is not proposed that the Morandoo Arrival Road (number 13 road) and the OneSteel Arrival Road would be used for breaking up trains associated with the Concept Plan. As stated in Section 9.2.2 of the EA, OneSteel requires access to their facility and therefore the Morandoo Arrival Road (number 13 road) and the OneSteel Arrival Road need to be kept clear. This means that trains cannot be parked in the number 6 road on arrival for any length of time, as they are too long for the siding and would block access and egress for OneSteel trains. If a Port train needs to be held in Morandoo Sidings for some hours while it waits for entry into the site, then it would be broken in two and parked in the number 4 and 5 roads. If it is only a short term park, then the number 6 road can be used and any potential conflict with OneSteel trains can be easily managed by carefully scheduling these train movements. As stated in the EA, use of the number 6 road should be discussed and agreed with OneSteel.

b) It is acknowledged that the future rail exit road to the Bullock Island loop would result in an area of land within the General Purpose and Bulk and General Precincts being affected somewhat by access restrictions particularly when trains are exiting the site. As the Concept Plan is only expected to generate up to four

trains per day the restrictions would only occur for a limited period during each day. It should be noted that this arrangement has already been approved under the 2001 consent. It is possible during detailed design that the alignment of the exit road could be modified slightly to reduce the area of land affected by these access restrictions.

c) Comment noted.

d) Section 5.3 and 5.4 of the revised Transport Assessment indicates that intersection upgrades are required at the Ingall Street/Industrial Drive intersection. Section 5.6.1 of the Transport Assessment recommends that this intersection be upgraded to include a short left turn slip lane from the Ingall Street southern approach in 2024 and a short right turn lane from the Ingall Street northern approach in 2034. The other site access from Industrial Drive / George Street is able to accommodate port generated traffic in 2024 and 2034 without any upgrades required. Refer to the response provided to the issued in **Section 3.4.1 (a)** of this Submissions Report for additional information.

e) Based on the assumptions that underpin the revised traffic modelling, it is recommended that a link road within or external to the site be created (in conjunction with a traffic management system) in 2024 which allows traffic from the Container Terminal Precinct to be redirected to the Industrial Drive / George Street intersection which has additional capacity.

f) The road referred to runs through the OneSteel land and land under other ownership. Industrial Drive is the approved heavy goods route through the area as specified in Section 3.1.2 of the revised Transport Assessment.

g) Refer to the response provided to the issue in **Section 3.4.6 (c)** of this Submissions Report.

h) Refer to the response provided to the issue in **Section 3.4.1 (c)** of this Submissions Report.

3.2.5 Monitoring Mitigation and Management (Site/General)

Submission Numbers

62, 63

Summary of Issues

The following issues were raised by respondents:

a) Concern over how the environmental commitments and performance criteria would be integrated into future Project applications for the proposed concept or development of the IIP. Given that Project applications are likely to be required within each precinct, it is unclear who would be made responsible for the planning, cost sharing, delivery, monitoring and reporting of recommended mitigation measures made within the EA. For example, who would be responsible for undertaking improvements to affected noise receivers? NPC should be made responsible for the delivery and monitoring of all proposed mitigation measures via appropriate Conditions of Approval under this Concept Plan.

b) Recommendation that the development of the proposed concept be undertaken in accordance with the Contaminated Site Management Plan (CSMP). Requirement under the proposed concept that confirmation from an accredited site auditor be obtained to ensure the design includes appropriate remediation and risk management controls compliant with the requirements of the CSMP and the works have been carried out in a manner that is suitable for the proposed use.

Response

a) The EA provides broad parameters and an environmental management framework within which subsequent Project applications would be required to fit. An important component of this framework is the environmental performance objectives and criteria outlined in Section 11.2 to Section 11.16 of the EA which would guide the development of the site. Individual developments at the site would be required to comply with the environmental performance criteria. Statement of Commitments (SoC) would be triggered by individual Project applications which exceed threshold limits set under the environmental performance criteria. NPC would be responsible for continually monitoring and managing performance to ensure the environmental performance objectives and criteria are being met.

NPC has committed to preparing overall site management plans and models, where appropriate, to facilitate management of the site as a whole, including for example, an overall site noise model, a site Transport Management Plan, and a site Infrastructure Plan. These commitments are documented in NPC's SoC for the proposed concept.

Project applicants would prepare separate SoC for each Project application that would reflect the more detailed project information available at the time of application, and would be generally consistent with the SoC for the proposed concept. Project applicants would be responsible for implementing mitigation measures required for their individual developments, including installation of noise mitigation measures on-site and providing mitigation for residences affected by traffic noise.

The potential future development of the IIP site is a separate project and will occur on a separate site, as such does not fall under the approvals or commitments of NPC. Therefore, the environmental performance objectives and the criteria presented in Section 11 of this EA do not apply to the IIP.

b) NPC commit to developing the site in such a way as to preserve the remediation outcome as set out in the *Voluntary Remediation Agreement* (VRA) and in a way which is consistent with the requirements of the CSMP. As set out Section 11.11.13 of the EA, there is environmental performance criteria set for the site which requires all development to be carried out in accordance with the VRA and the CSMP.

To ensure the site functions in accordance with the environmental performance criteria, NPC would:

- Oversee development of the site to ensure that it is carried out consistent with the VRA and CSMP.
- Obtain confirmation from the Site Auditor that the design of the individual facilities complies with the requirements of the VRA and CSMP prior to the commencement of any works. Should there be any instances of non compliance, Project applicants would be required to alter the design or include appropriate management controls to obtain compliance.

3.3 Consultation

3.3.1 Community

Submission Numbers

1a, 1b, 5, 6, 10, 11, 12, 13, 14, 15, 17, 19, 20, 21, 22, 24, 25, 26, 27, 28, 29, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 58, 59, 60, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 93, 94, 95, 96, 97, 99, 100, 101, 102, 105, 107, 108, 111, 112, 113, 114, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177

Summary of Issues

The following issues were raised by respondents:

a) Concern that the majority of residents have not been consulted and that the consultation conducted has been unsuccessful. Community members were not invited to the Planning Focus Meeting (PFM) and the Information Session held during exhibition of the EA was not considered adequate community consultation. Requests were made for further community consultation prior to approval of the proposed concept, on issues such as increased dust and noise levels in the locality.

b) Most residents are not aware of the Mayfield CCC and the Mayfield CCC was generally not considered to be representative of the community.

c) The owners of houses that may require noise treatments are concerned that they have not been consulted. Requests have been made for consultation between NPC and residents directly affected by traffic noise.

Response

a) The PFM is organised by the DoP who invite other State and Local government stakeholders as appropriate so that all government issues are identified upfront and integrated into the DGRs. The community does not get invited to the PFM, rather the DoP set out requirements in the DGRs for the proponent to consult with the local community.

NPC conducted a community consultation program, immediately prior to, and during the public exhibition period. The following was undertaken:

- A dedicated link on the NPC website about the Concept Plan and the methods for viewing and commenting on the EA.
- Meetings with all key stakeholders including BHPB, PWCS, Road and Traffic Authority (RTA) (did not attend), HDC, OneSteel, NCIG and the Mayfield CCC (one attendee).
- A presentation to a sitting of the Newcastle City Council.

- Two sets of newspaper advertisements in The Newcastle Herald, The Post and The Star.
- A media release prior to the exhibition period commencing.
- An information flyer, which included advertising for an information session, placed in 7,000 letterboxes in Mayfield, Carrington and Stockton.
- An open 4 hour information session held in the Mayfield Sport and Recreation Club.
- The provision of hard copies of the Concept Plan in three local libraries and the City Council office.

Subsequent to the exhibition period, which closed on the 6 September 2010, NPC attended a community organised meeting (Correct Planning and Consultation for Mayfield Group) at the Mayfield East Primary School on 25 September 2010. NPC offered a further three weeks extension for a consolidated submission from CPCMG. The NSW DoP subsequently agreed to accept all submissions made during this period.

As detailed in the response to the issue in **Section 3.3.1 (b)** of this Submissions Report, NPC commit to ongoing consultation with the community.

b) The BHP Steelworks site (known as the Closure Area) is made up of a 90-hectare portside portion being the site of the proposed concept which is proposed to be developed by NPC for port-related activities, and a 60-hectare area at the rear of the site which is to be developed as the IIP.

The Closure Area was the site of BHP iron and steel making operations until 1999, as discussed in Section 1.1 of the EA. In 1999, BHP ceased operations and lodged an Environmental Impact Statement to demolish the steelworks, remediate the closure area and develop a multi-purpose terminal. The development was approved and consent conditions were issued by the Minister for Planning in 2001.

DA 293 08 00 M1 (29 June 2001) required BHP Limited to establish a Community Consultative Committee (CCC) in relation all future works and development proposed to be carried out on the Closure Area. The Mayfield CCC was established as ordered under the June 2001 DA modification, to act as the interface with the broader community. The approval conditions of the June 2001 modification required the members of the Mayfield CCC to include:

- An independent chairperson nominated by the Councils and approved by the Director-General.
- At least four community representatives residing within 2 kilometres of the site boundary and approved by the Director-General.
- Not more than two representatives appointed by the Applicant, one of which must be the Environmental Officer.
- At least one representative from the Council.

Meetings of the Mayfield CCC have been held at regular intervals, as determined by the chairperson, subsequent to the June 2001 modification. Minutes of the Mayfield CCC meetings are available for public inspection at the council.

One form of community consultation carried out by NPC, was through the Mayfield CCC mechanism. As discussed in Section 7.3.2 of the EA, NPC discussed the proposed concept at a Mayfield CCC meeting in August 2009.

NPC understands that the Mayfield CCC is about to be reformed as HDC are currently advertising positions. NPC commits to continuing to liaise with the Mayfield CCC (or the reformed Mayfield CCC) to periodically update them on the status of development of the proposed concept and to discuss issues of concern to the community (refer to Section 11.12 of the EA).

In addition to communication via the Mayfield CCC, NPC intend on reconnecting with the original stakeholders and participants and will actively engage with community groups. NPC are committed to providing all stakeholders with clear and easily accessible information and to that end will re-adopt all communication options previously used as well as additional measures including, but not limited to such measures as establishing a ‘shopfront’.

c) Under the Concept Plan, mitigation measures to reduce potential traffic noise impacts are suggested in Section 9.3.4 of the EA. NPC recommends that these measures be considered by Project applicants and assessed in detail when specific projects noise impact assessments are prepared. Measures proposed in the EA include the provision of façade treatments to the identified residences so that internal acoustic amenity of residences would be protected during the night time.

Measures outlined in the EA are based on traffic generation assumptions for the operation of the proposed concept in 2034. It is recommended that detailed traffic noise assessments be undertaken at the Project Application stage of specific projects which would more accurately determine the need for and timing of, traffic noise mitigation along Industrial Drive. Project applicants would consult with residences regarding mitigation during the application process.

Measures would only be implemented when traffic trigger levels and operational capacity levels are reached which is likely to be many years into the future.

3.3.2 Agency

Submission Numbers

20

Summary of Issue

The following issue was raised by respondents:

a) Concern that Newcastle City Council was not made fully aware of the scale of the proposed concept in a timely manner given that no issues were raised by Council in Table 7.2 of the EA which outlined Stakeholder Consultation undertaken as part of the formal procedure of issuing DGRs.

Response

a) As detailed in Section 7.2 of the EA the DoP invited relevant statutory authorities to the PFM held on 17 April 2009. Newcastle City Council was invited to attend and was represented at the meeting. At this time Newcastle City Council was given the opportunity to submit an outline of key issues and criteria to the DoP. The DoP then consider submissions from the relevant statutory authorities for inclusion into the DGRs.

NPC made a presentation to a sitting of Newcastle City Council during the exhibition period for the EA. Council were given the opportunity to ask and have their questions addressed by NPC during the session.

Newcastle City Council provided a submission on the EA which has been considered in this Submissions Report.

3.3.3 Stakeholder

Submission Numbers

23, 31, 177

Summary of Issues

The following issues were raised by respondents:

a) Developers of the IIP have not been directly contacted by NPC and have not been consulted with regard to the aims and objectives of the proposed concept. There is also no evidence of consultation being undertaken with other stakeholders such as PWCS.

b) Request that NPC be required to formally consult with surrounding land owners and occupiers at least once a month in relation to the development plans under the proposed concept.

c) A large amount of stakeholder consultation is considered to be required to determine an appropriate means of dealing with the rail transport required to service the area.

Response

a) NPC had a teleconference with HDC on 10 May 2010 to obtain information on stormwater drainage at the site of the proposed concept and the IIP. NPC had a teleconference with HDC and Buildev on 25 May 2010 to discuss the transportation (road and rail) interconnections between the proposed concept and IIP.

NPC held a stakeholder briefing session on 12 August 2010 during the exhibition period for the EA. The briefing session was attended by stakeholders including Buildev, HDC, BHP Billiton, OneSteel and PWCS. NPC provided a detailed description of the proposed concept and an overview of the key findings document in the EA. Participants were given the opportunity to ask questions during the session.

NPC has continued to consult on a quarterly basis with HDC in relation to the proposed concept.

b) Consultation and community engagement is encouraged by the DoP for project approvals under the *EP&A Act*. Community consultation relating to the development plans of subsequent Project applications would likely be set out in specific projects DGRs.

c) It is agreed that further consultation should be undertaken with a range of stakeholders in relation to the Concept Plan. It is appropriate that this consultation commences immediately and is also undertaken in the context of future Project applications for development within each precinct as at this stage further detail regarding the scope of each individual development and the potential impacts will be known. Those stakeholders to be consulted include:

- ARTC (high level consultation undertaken)
- RailCorp (high level consultation undertaken)
- Transport NSW (particularly in relation to the scope and timing of the NSFC project)
- Pacific National
- PWCS
- OneSteel
- The new Berth operators (as they are identified)
- Buildev (as the operators of the IIP site)
- Bullock Island Grain Services

3.4 Transport

3.4.1 General

Submission Numbers

20, 27, 61, 62, 92

Summary of Issues

The following issues were raised by respondents:

a) Concern that the DGRs have not been addressed with regard to assessing and mitigating the impact of traffic and transport generated by the proposed concept.

b) The EA does not address how the transport requirements of the proposed concept, including access to and from site, fits with the *NSW State Plan*, the *Lower Hunter Transport Working Group Final Report 2003*, or the *Newcastle City Centre Local Environment Plan 2008*.

c) Suggestion that alternative transport modes including public transport, walking and cycling should be promoted and facilitated in relation to road works associated with the proposed concept.

Response

a) Section 5 of the revised Transport Assessment assesses the impact of traffic and transport generated by the proposed concept in the future years of 2024 and 2034.

It was initially assumed that the Container Terminal Precinct and Bulk Liquid Precinct would be accessed via the Industrial Drive / Ingall Street intersection and the General Purpose Precinct, Bulk and General Precinct and NCP Operations Precinct would be accessed via the Industrial Drive / George Street intersection. However, initial analysis indicated that in the PM peak under the future 2024 scenario with development, the Industrial Drive / Ingall Street intersection did not perform satisfactorily level of service (LOS) F and a degree of saturation (DoS) greater than 1). This was mainly due to the large number of vehicles from the Container Terminal Precinct predicted to use the Ingall Street / Industrial Drive intersection for access.

Therefore, it is recommended that a link road within or external to the site be created (in conjunction with a traffic management system) which allows traffic from the Container Terminal Precinct to be redirected to the Industrial Drive / George Street intersection which has additional capacity.

In addition to this, further mitigation measures are required at the Industrial Drive/Ingall Street intersection to accommodate the proposed development traffic in 2024 and 2034. The recommended mitigation measures are as follows:

- 2024 with development traffic – addition of short left turn slip lane from the Ingall Street southern approach; and
- 2034 with development traffic – addition of short right turn lane from the Ingall Street northern approach.

These upgrades may be able to be undertaken within the existing road reserve. but if not, and private property is required to accommodate the road works, then the property must be acquired / dedicated, by the land owner/developer, and designated as public road reserve in favour of the RTA or Council.

The impact of establishing an internal link road to redirect traffic to the Industrial Drive / George Street intersection which has additional capacity was analysed. The results indicate that while the initial and final operations development generated traffic has a slight impact in terms of DoS, average delay and queue length, the overall LOS in the AM and PM peaks remains acceptable at the Industrial Drive / George Street intersection, namely LOS B in 2024 and LOS C in 2034.

With an internal link road and Traffic Management Plan (TMP), and recommended intersection upgrade works, the level of service at the Industrial Drive / Ingall Street intersection remains at LOS B in the future 2024 AM peak (initial operations) and in the 2034 AM (final operations). In the PM peak, the level of service is predicted to be LOS C in 2024 and LOS E in 2034 with proposed final operations and the intersection would operate at capacity in the PM peak hour. Intersection performance could be improved further by diverting all employee traffic to the Industrial Drive/George Street intersection in the PM peak hour.

While the above TMP allows the intersection to function satisfactorily, there may be other management options that would still allow the intersections to operate within satisfactory performance criteria. Precinct operators should not be prohibited from deviating from the above TMP, as long as they can demonstrate that the intersections operate satisfactorily under a different management option.

b) A new section on State and Local Government Policy (Section 2) has been added in the revised Transport Assessment which provides an overview of the current policies and legislation from State to local level with regards to transport that may influence the proposed concept. Planning policies assessed against the proposed concept include:
   - *NSW State Plan*
   - *State Infrastructure Strategy*
   - *Lower Hunter Regional Strategy*

c) Section 7.4 of the revised Transport Assessment states “Workplace Travel Plans should be considered in the future Project applications for the individual terminals/precincts, when these are made by the prospective operators of the facilities, with attention given to access by walking, cycling and public transport. This would reduce the impact made by employee traffic. It is also recommended that construction of any future road infrastructure should consider pedestrians and cyclists by incorporating appropriate facilities for these users, where appropriate. This would need to be balanced against the proposed operation of the road within the port facility.”

3.4.2 Road Network and Traffic Volume

Submission Numbers

1a, 3, 11, 12, 13, 15, 17, 18, 20, 21, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 58, 59, 60, 62, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 102, 104, 106, 107, 108, 111, 112, 113, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177

Summary of Issues

The following issues were raised by respondents:

a) Concern that traffic generation figures have been underestimated for all precincts excluding the NPC Operations Precinct. The RTA commented that trip generation rates adopted for the site are low and have not been justified by surveys of a similar development. The following concerns have been raised regarding trip generation rates and modelling:
   - Concerns that the trip generation rates have been reduced from those originally included in the EA submitted for adequacy review. The trip generation rates should be reviewed and that the rates used for the Port Botany Expansion, that is 1.21 containers per truck, should be taken into consideration.
   - *The Traffic Impact Study for the Interim Port Side Industrial Development* (Better Transport Futures and Mark Waugh Pty Ltd, June 2008) had date and other calculation errors, which resulted in the

underestimation of traffic flows at the intersection of Industrial Drive and George Street by approximately 25 per cent.

- The growth rate of 0.27 percent adopted for the assessment of the performance of the road network in the future is too low. A growth rate of 1 percent per annum should be adopted for this analysis. At other sites within Newcastle, RTA has required that a growth rate of 2 percent be adopted. The current data does not account for the recent and future development of local growth areas or the closure of the Steelworks.
- The analysis of the intersections of Industrial Drive / George Street and Industrial Drive / Ingall Street should be revised taking into account the following:
  - Current traffic counts and 10 year traffic growth projections;
  - With and without development scenarios;
  - 95th percentile back of queue lengths;
  - Delays and level of service on all legs; and
  - Use of SIDRA or similar traffic model.
- The default SIDRA settings used to calculate queue lengths have been adopted. A length of 19 metres should be used for the truck length instead of the 13 metres currently assessed.

b) The impact of construction traffic has not been assessed as part of the Transport Assessment. The impact of construction traffic on the surrounding road network should be included in the Transport Assessment.

c) Concerns were raised that the proposed concept has potential to negatively impact on local streets and worsen local and regional traffic conditions. Concerns of an apparent lack of consideration in the EA of infrastructure capacity and constraints. Recommendation that modelling of the broader traffic impacts should be provided in the Transport Assessment.

The following points were raised toward the assumptions of the traffic assessment and the perceived road networks, of Mayfield and surrounding suburbs, ability to sustain the increase in heavy vehicles and other vehicle movements:

- Concerns regarding the capacity of intersection infrastructure.
- Concern that the stated capacity of the local roads is too high, in particular Selwyn Street. Given the surrounding land uses and proposed developments in the area, uninterrupted flow would not occur and the capacity would be further reduced.
- Concern that the assessment focuses only on the points of access and egress to and from the site and not the wider road network. Concern that road access between Industrial Drive and the F3, and major arterial roads and freeways between Mayfield and Sydney, would experience more congestion on an already congested road network.
- Recommendation that the Transport Assessment take into account other approved RTA projects and reports.
- It is unclear as to whether the cumulative traffic impact from growth in traffic generated by surrounding developments has been included in the traffic assessment.
- Concerns regarding the potential for impact on public transport in the vicinity of the site.

d) There are currently no mechanisms to control truck movements through the residential areas. Currently no heavy vehicle transport route maps have been included in the EA. Suggestions of respondents in relation to a potential route include:

- An enforceable transport route is required so that heavy vehicles do not utilise local streets.
- The heavy transport road that runs from the site through to Tourle Street be utilised for the proposed concept.
- Trucks should utilise Industrial Drive only.

e) Traffic control devices should be in place at the George Street/Industrial Drive and Ingall Street/Industrial Drive intersections.

f) In relation to the assessment of the relationship between road and rail movements the following issues have been raised:

- The interaction between rail and vehicular traffic has not been adequately addressed.
- The impact that additional trains would have on local traffic at level crossings was not adequately addressed.

- There is likely to be a significant impact on the Selwyn Street level crossing as the trains are being prepared for departure.

g) No assumptions were made in the EA regarding the destination of cargo and the impact on the wider road network.

Response

a) Responses addressing each bullet point specifically is provided below:

- The trip generation rate has reduced from those originally submitted in the adequacy review version of the EA due to revised hours of operation of the proposed concept as advised by NPC. The hours of operation were increased from 12 hours per day, 5 days per week to 24 hours per day, 7 days per week, resulting in a reduced number of trips per hour. Ports typically work 24 hours a day, 7 days a week. Based on data from Port Kembla and Port Botany, a ratio of 1.8 TEUs / truck is considered a reasonable loading assumption. The assessment undertaken for the revised Transport Assessment uses this assumption for the container terminal as opposed to the assumption of 2 TEUs / truck used in the original Transport Assessment.
- The traffic flows at the intersection of Industrial Drive / George Street were underestimated due to a calculation error in the traffic data provided in the *Traffic Impact Study for the Interim Port Side Industrial Development* (Better Transport Futures and Mark Waugh Pty Ltd, June 2008). Correct traffic flows have been calculated and included in the revised Transport Assessment in Section 3.1.3.
- A growth rate of 1 percent per annum, as agreed with the RTA during a teleconference on 23 November 2010, has been applied in the revised Transport Assessment.
- Section 3 of the revised Transport Assessment analyses the intersections of Industrial Drive / George Street and Industrial Drive / Ingall Street under current traffic conditions. Section 4 of the revised Transport Assessment analyses the intersections under future year scenarios (2024 and 2034) without development.
- Section 5 analyses the intersections under these future year scenarios with development. Analysis of the Industrial Drive / George Street and Industrial Drive / Ingall Street intersections under both the 2024 and 2034 scenarios has been undertaken using the modelling package of SIDRA Intersection 3.2. Analysis of intersection performance is based on level of service, minimum average delays, degree of saturation and 95th percentile back of queue.
- The Industrial Drive/George Street and Industrial Drive/Ingall Street intersections have been re-modelled in SIDRA Intersection 3.2 using a truck length of 19 metres. Queue lengths at the Industrial Drive/George Street and Industrial Drive/Ingall Street intersections in 2034 (worst case) are presented in Section 5 of the revised Transport Assessment.

b) As detailed in Section 7.2.2 of the revised Transport Assessment, the impact of construction traffic has not been assessed due to details of the exact nature of the infrastructure required on site being unknown. However, it is anticipated that daily construction traffic would not exceed daily traffic predicted for the proposed 2024 initial operations, which are shown to be within the capacity of the access intersections and are not predicted to have a significant impact on the proximal road network.

Further detailed assessment should be dealt with as part of the future Project applications for the construction and operation of the individual terminals/precincts, when these are made by the prospective operators of the facilities. Construction Management Plans should be implemented to ensure impact of construction traffic to the road network is limited.

c) Consideration has been given to infrastructure capacity of the road network including intersections, the local road network and the broader road network in the following sections of the revised Transport Assessment:

- Section 5.3 addresses the capacity of infrastructure with regards to the intersections in 2024, and Section 5.4 addresses the capacity of infrastructure with regards to the intersections in 2034. Where intersections were found to not operate satisfactorily, alternative access arrangements and mitigation measures were recommended.
- Section 5.4.2 of the revised Transport Assessment discusses the capacity of the local road network and uses the *Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis 2009* as a reference. The total predicted volume of traffic generated by the proposed concept in 2034 was found to be within the mid-block capacity of the existing local industrial road network. Furthermore, capacity exists to accommodate additional traffic generated by the proposed concept of adjoining sites, such as IIP, that may occur in the future.

- Section 5.4 of the revised Transport Assessment addresses the capacity of the broader road network. The assessment determined that trucks and other vehicles generated by the proposed concept would be a small proportion (<8 percent) of the average annual daily traffic (AADT) on the broader road network in 2034 and so is considered to have a minimal impact (refer to Table 5-33 of the revised Transport Assessment).
- Section 3.1 of the revised Transport Assessment states that while the F3 – Branxton and the F3 – Raymond Terrace upgrade works are likely to occur during the timeframe for development of the proposed concept, they are not expected to impact access and egress to the site of the proposed concept and hence have not been considered in the Transport Assessment. Consultation with the RTA suggests that no major upgrades to Industrial Drive are proposed.
- Section 6 of the revised Transport Assessment discusses and analyses the cumulative impacts associated with surrounding developments in the area and provides mitigation measures where necessary. Refer to the response provided to the issue raised in **Section 3.15.1 (a)** of this Submissions Report for details.
- Section 5.5 of the revised Transport Assessment addresses the impact of the proposed concept on public transport, finding that whilst an increase in traffic could cause an increase in congestion in the vicinity of the site, the low frequency of buses on Route 104 (the only bus route operating within the vicinity of the site) would mean that there would not be a significant impact to bus operations. It is likely that development of the proposed concept would generate increased demand for public transportation services in the area, and that Newcastle Buses would alter and/or increase the routing and services in the vicinity of the site to accommodate to this need.

d) Industrial Drive is the approved B-Double route in the vicinity of the site and would be used by the heavy vehicles generated by the proposed concept. Section 5.6 of the revised Transport Assessment includes a recommendation that designated truck routes, are included in the TMPs. Heavy vehicle traffic from the port should be prohibited from using the local residential road network.

e) Traffic control devices (signals) exist at the two intersections.

f) Section 5.4.3 of the revised Transport Assessment discusses the interaction between proposed rail movements and the impact on the road network due to level crossing closures. The revised Transport Assessment assumes that the rail crossings are blocked for a maximum of 6 minutes and an average truck length of 19 metres. The maximum queue length at the Selwyn Street and western crossings are expected to be 114 metres and 342 metres, respectively, although the queue length at Selwyn Street would increase to 342 metres and the queue length at the western crossing would decrease to 114 metres with establishment of the link road. On the basis of the analysis, closing the rail crossings is not expected to have an impact on the George Street / Industrial Drive intersection and Ingall Street / Industrial Drive intersection in either peak hour as they are 600 metres and 750 metres from the rail crossings, respectively. Grade separation of one of the rail crossings may be required in the longer term to ensure that the efficiency of port operations are not affected by transport delays.

g) Section 5.4.1 of the revised Transport Assessment states that the road and rail assessment has been prepared based on 'the likely direction of traffic flow having regard to the geographic location of the potential markets for the various cargo types and the structure of the local and regional road networks'. The probable destinations for cargo were developed by NPC and used in the assessment. As detailed in Section 5.3.2 of the revised Transport Assessment, it was assumed that 80 percent of all traffic (trucks and vehicles) travels to/from the north and 20 percent travels to/from the south of the site. Refer to the response provided in **Section 3.4.2 (d)** of this Submissions Report for information on the impact of the proposed concept on the wider road network.

3.4.3 Rail Network

Submission Numbers

11, 12, 13, 15, 20, 21, 22, 24, 25, 26, 28, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 58, 59, 60, 61, 62, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 92, 93, 99, 102, 103, 115, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 177

Summary of Issues

The following issues were raised by respondents:

a) Concern over the logistics of the rail access to the site. One line in and out is likely to be insufficient to meet industry demand.

b) The proposed concept should only proceed with greater rail access. The Dyke Coal Loading berths provide an example of how the development can be compatible with the region, however, a heavy reliance on rail is required.

c) Projected coal tonnages and coal paths should be considered when determining available train paths and entry points into the Port Waratah Yard. The EA only seems to consider traffic from Sydney to Newcastle and “mixed type traffic” from western and north western areas of the state. The Main North Line extends from Sydney to Wallangara but the EA only focuses on Sydney to Newcastle.

d) Clarification required as to whether the 80 train paths per day includes 40 loaded and 40 unloaded in the up and down direction respectively or a total capacity. Transport NSW advises that the 80 freight services required is substantially beyond the current estimates for the NSFC project and the assertion that freight services would be able to operate unrestricted concurrently with peak passenger operations is incorrect. The NSFC project would not be a single piece of infrastructure but rather the progressive development of infrastructure enhancements to the RailCorp multi-user network.

e) Explanation of the definition of boutique coal and its source location is required. It is more likely that boutique coal would be moved in consolidated form which would represent a higher frequency of arrivals over a short space of time.

f) Further information required as to how the rail operations figures were determined and what machinery would be utilised to achieve the unloading rates stated for the proposed concept. Would access to both sidings be available and is the method of unloading via fork trucks or an over head gantry system?

g) Limiting trains to 20 percent eliminates the need for additional rail infrastructure. This seems unreasonable.

h) There is no discussion of double deck rail cars.

i) Clarification required around the ownership of the Morandoo arrival roads.

j) More work is required on the operational modelling for the proposed concept. The proposed use of the Main North Line may prove to be problematic as there would be difficulty in scheduling the required movements. There is no reference to availability of train paths on the Bullock Island Loop.

k) The rail mode share needs to be reassessed in conjunction with Transport NSW who is currently preparing the *NSW Freight Strategy* to investigate the rail mode share target for containers out of the Port.

l) Questioned the statement in EA that trains over 1,244 metres long cannot operate over the Cowan Bank. The Main North Line currently supports 1, 500-metre long freight trains.

m) It should not be assumed that the four potentially available train paths on the Sydney-Newcastle rail corridor can be dedicated to rail traffic travelling to or from the proposed concept. It should also not be assumed that they would still be available in 2024 when Stage 1 of the proposed concept comes on-line.

n) As demand on the northern corridor increases, efficiency of operations would be paramount. Trains would be expected to operate at maximum length and freight trains would operate with a power-to-weight ratio and braking performance which improves their ability to join the mixed traffic multi-user corridor.

Response

a) The port is space constrained such that only one train could be operated from the port side at any time. A single rail line is sufficient to deal with the expected number of train movements associated with the Concept Plan (up to four trains per day) assuming a modal split of 20 percent rail. One rail line is also sufficient to cater for a modal split higher than 20 percent provided other rail infrastructure upgrades within the site are implemented.

b) The Dyke Coal loading berth is not a good example as it handles bulk coal whereas the Concept Plan for the Mayfield site is based around a series of precincts including bulk liquid, container, general purpose, bulk and general purpose, and NPC operations precincts. There is no plan to export bulk coal from the Mayfield site (only boutique coal in limited volumes). There are other locations at Carrington and on Kooragang Island which have been identified as appropriate locations for bulk coal handling.

   The Mayfield site has been identified as the location for NSW's second major container handling facility (behind Port Botany). Handling container units requires good waterfront access, which can only be provided by having the sidings in close proximity to the berths.

   The Dyke Coal Loader is a good example of remote access to a berth, and is applicable to a bulk coal handling facility, but not to the range of port operations proposed under the Concept Plan and in particular to containers.

c) The EA concentrates on Sydney as the origin or destination of the container freight, which makes up over 90 percent of the rail traffic associated with the Concept Plan. This rail traffic would come into contact with coal traffic at Islington Junction. This is in itself not a problem as there are available timetable slots in the network to allow entry of trains into the Morandoo Sidings and exit of trains from the site back onto the Port Waratah Loop. However, as recommended in the EA, signalling improvements and careful scheduling will be required to allow trains to enter and exit the Morandoo Sidings and connect back into the Port Waratah Loop.

d) ARTC's original stated aim for the NSFC project was to provide 80 train paths per day. This is two northerly train paths and two southerly train paths per hour, 20 hours per day. It is understood that when the NSFC project is complete, the demand for intercity paths for passenger trains travelling between Melbourne to Brisbane will drive the number of freight train paths available on the network.

   Discussions with Transport NSW are ongoing, but based on the NSW Government's Updated Submission to Infrastructure Australia dated July 2010 the first stage of the NSFC project will be completed in 2015 and will increase capacity from 16 to 26 freight trains per day each way.

   This means that prior to completion of the first stage works for the NSFC project the modal split for the initial operations of the port might need to strongly favour road over rail. After the first stage is completed then additional trains can be brought online to service the port depending on the exact take up of the additional paths which are created.

e) Boutique coal is coal that has been blended or sized. The source of boutique coal is the same as for other coal types.

f) Reach stackers were selected by NPC for use in the initial operations of the container terminal because they are relatively inexpensive, allow operations to be scaled based on demand, and are suitable for use in loading and unloading containers from two parallel rail sidings. The unloading and loading rates which have been adopted in the analysis are based on use of a number of reach stacker vehicles operating in concert. The siding nearest the waterfront would be unloaded before the siding nearest the rail line can be emptied, for loading the siding nearest the rail line is loaded before the siding closest to the waterfront.

g) The adoption of a 20 percent modal split to rail is based on current rail modal splits achieved at other ports and is dependant of the cost of road transport. The other influencing factors were the limited availability of train paths on the Main North Line, the constraints of the site which affect the ability to load and unload trains in the port with maximum efficiency, and the lack of availability of a destination point for consolidated freight in Sydney.

h) Use of double deck rail cars is not possible in NSW due to the large number of existing bridges that are only tall enough to accommodate single deck rail cars.

i) Pacific National currently own arrival roads 1 through 10, ARTC owns arrival roads 11 through 13 (the 3 arrival roads closest to Selwyn Street).

j) The EA dictates that further work should be undertaken prior to a major Project Approval being given for any berth. The operation of Mayfield depends on the operator, clients and the type of cargo. This is not yet set, and therefore it is not possible to predict what type of service will actually be run. If the operating scenario presented in the EA is taken up, then the Mayfield site can be serviced from current spare timetabled slots in the Port Waratah and Bullock Island Loop timetables.

k) The EA has modelled a base case modal split of 80/20 (road/rail) for the Concept Plan but other scenarios have also been modelled. The rail mode share will depend to a significant degree on the timing of planned upgrades to the Main North Line as detailed in the NSFC project. It is appropriate for NPC to consult with

Transport NSW and other agencies to ensure that there is reasonable alignment between the timeframe for development of the port and the planned upgrades to the regional rail network.

l) Section 9.2.2 of the EA states that the current standard train consist for both Queensland Rail Freight and Pacific National is a 1,244 metre freight train consisting of two 600-metre wagon rakes and three locomotives. Trains of 1,500 metres in length are operated using an additional (fourth) locomotive. This is the standard consist used for the intercity route between Sydney and Brisbane. A train from Newcastle to Sydney of this length (1,500 metres) would not be used simply for economic reasons.

m) The EA states that there are currently four train paths per day available on the Main North Line. It also states that NPC would need to enter into discussions with RailCorp over the use of those paths to accommodate rail operations associated with the Concept Plan. It is not assumed that those paths would automatically be made available to NPC, some of the paths may be required for Inter-city freight trains or for passenger services.

If those paths are not available, the modal spilt in the initial stages of development of the Concept Plan would potentially move higher and potentially could even approach 100 percent by road. In the short/medium term a higher reliance on road transport is sustainable provided the traffic volumes generated by the initial Concept Plan operations do not exceed those threshold levels modelled in the EA and the recommended mitigation measures are implemented (refer to revised Transport Assessment by AECOM dated December 2010).

In the medium/longer term the modal split should move back to at least the 80/20 (road/rail) split modelled in the EA and possibly beyond this level provided that:

- The NSFC project is implemented in stages as proposed and noting that all 3 Stages are is due for completion by 2024.
- The recommended rail infrastructure upgrades associated with the Concept Plan are carried out.

Based on the NSW Government's Updated Submission to Infrastructure Australia dated July 2010 it is likely that all 3 stages of the NSFC project will be completed before 2024 and as a result a significant number of additional freight train paths will be available to service the NPC site. As a result some additional infrastructure upgrades will be required at the port including the new exit road to Bullock Island loop, extending the length of rail sidings or adding additional sidings, introduction of gantry style loading system as opposed to reach stackers. This would enable longer trains to access the port which would in turn improve the efficiency of rail operations.

Clearly it is important for regional rail infrastructure upgrades such as the NSFC project to be co-ordinated both in respect to timing and the additional rail capacity created, with the development of port operations at Mayfield as detailed in the Concept Plan. In this respect it is important for consultation to occur between the relevant agencies involved including Transport NSW, ARTC, Railcorp and NPC.

n) The likely train consists that have been proposed are taken from the *RailCorp Network Operating Manual*. Where possible the train lengths will be increased to the maximum possible on this route, which would be 1,244 metres as described above. This requires longer and/or additional sidings in the port, and could include the use of gantries, which increases the capital and operating costs of the port but also improves efficiency. It is likely that this will happen at some point but not during the early operations when the port is still moving less that 600,000 TEU per annum.

3.4.4 Modal Split

Submission Numbers

3, 12, 18, 30, 31, 39, 69, 92, 93, 94, 95, 96, 97, 100, 101, 104, 106, 107, 108, 111, 112, 113, 116, 117, 118, 119, 120, 121, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176

Summary of Issues

The following issues were raised by respondents:

a) Justification of the modal split is required. Evidence that this is achievable should be provided given the potential competition between coal and freight haulage in the Hunter and the comparative efficiency and flexibility of road transport.

b) The NSW Government target for freight transport by rail from Port Botany was 40 percent. Clarification is required as to why this target has not been adopted for the proposed concept.

c) Request that all movements to and from the site be via ship or rail as this would provide the best social and environmental and social outcomes.

Response

a) The modal split for the Concept Plan has been adopted having regard to the following:

- The modal split currently achieved at other ports in particular Port Botany.
- Discussions with NPC regarding the type, volume and likely destination of cargo through the port.
- The physical constraints that apply to the site (refer to **Section 3.2.3 (a)** of this Submissions Report for details).
- The limited number of freight train paths available on the Main North Line until such time as the first stage of the NSFC project is completed in 2015.

Sensitivity analysis of a range of modal splits which more heavily favoured rail was included in the EA and in the revised Transport Assessment prepared by AECOM and dated December 2010. However, a larger number of train movements each day could only occur if certain local rail infrastructure improvements were undertaken on the site.

b) Port Botany currently achieves approximately 20 percent rail mode share. The NSW Government has set a target of 40 percent rail mode share for Port Botany on the basis that:

- All impediments to the movement of freight on the Metropolitan Freight Network and its associated logistics chain will be removed as a result of significant rail and signalling upgrades proposed to allow additional trains movements.
- The Moorebank Intermodal facility is constructed.

Until this time, the rail mode share will remain at its current level of approximately 20 percent.

A conservative 20 percent rail modal split target was adopted for the Concept Plan in recognition of the physical constraints that apply to the site and the limited number of freight train paths that are available on the Main North Line in the short/medium term until the first stage of the NSFC project is completed.

As the NSFC project is progressively completed and more freight train paths become available on the Main North Line it is possible that the rail modal split could increase beyond 20 percent subject to a number of potential rail infrastructure upgrades occurring at the NPC site such as:

- The new exit road connecting to the Bullock Island Loop.
- Increase in the length and/or number of rail sidings within the site so that longer trains can be accommodated.
- Introduction of gantry loading operations as opposed to reach stackers.

Justification for the 20 percent rail mode share for the proposed concept is provided above in the response to the issue detailed in **Section 3.4.4 (a)** of this Submissions Report.

Although 20 percent rail modal split is the base case modelled in the EA document, a range of higher rail modal split scenarios for bulk and container have also been assessed in the EA and in the revised Transport Assessment prepared by AECOM and dated December 2010.

The reason that these figures cannot initially be achieved at Mayfield include:

- There is insufficient space at Mayfield to allow for the loading and unloading of trains.
- There are insufficient paths available on the Main North Line to allow an increased number of trains to run to Sydney (note this might change once the NSFC project is completed).
- There is no predefined destination in Sydney, where the trains will be received and unloaded/loaded to ensure that this level of efficiency can be achieved.

c) Justification for the 80/20 percent road/rail mode share for the proposed concept is provided above in the response to the issue identified in **Section 3.4.4 (a)** of this Submissions Report. It is possible that a higher modal split to rail could be achieved subject to upgrade of the regional rail network as proposed by the NSFC project and subject to a range of infrastructure improvements on the Mayfield site (discussed above).

3.4.5 Safety

Submission Numbers

3, 30, 31, 89, 94, 95, 96, 97, 98, 100, 102, 106, 107, 108, 111, 112, 113, 114, 117, 118, 119, 120, 121, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176

Summary of Issues

The following issues were raised by respondents:

a) Heavily loaded trucks may damage the road surface creating safety issues for motorists.

b) The increased level of truck movements may introduce a significant safety hazard at level crossings. There are potential issues with sight distances at the new Western Road crossing given the proximity of this level crossing to the rail shunting lines and the existing rail tracks. The EA has not addressed the current Australian Level Crossing Assessment Model (ALCAM) rankings to assess the level crossings.

c) Concerned there may be safety issues at the Mayfield East Public School and Hunter Christian School due to more trucks on the road. Request NPC to consider measures to mitigate this potential impact.

d) Concern speeding trucks, which are already considered an issue around Industrial Drive, would increase as a result of the proposed concept. Suggests the installation of a fixed speed camera or 50 kilometres per hour limit is installed near Hanbury Street, Vine Street and Industrial Drive.

e) Safety concerns relating to the potential for impact on Emergency Services response times have been raised. Concerned surrounds the issues of increased truck movements and perceived underestimated amount of proposed concepts associated truck movements. Adequate road access for emergencies should be provided to and from the subject site, clear of any railway crossing due to the temporary storage of hazardous goods at the site.

Response

a) Section 5.4.2 of the revised Transport Assessment states that a detailed assessment of the impact of the proposed concept on the condition and geometry of the local road network has not been undertaken at this stage. It is recommended that such an assessment should be carried out as part of detailed Project applications and that precinct operators should be required to demonstrate the impact of heavy goods vehicles on the pavement condition and geometry of the local road network. This would include swept path testing of the type of heavy vehicles that operators are proposing to use on the access routes in and out of the site.

b) The risk of accidents occurring at the new Western level crossing is low for the following reasons:

- The three OneSteel trains passing through the crossing each day will be travelling at low speeds (approximately 5-10 kilometres per hour).
- Barriers will be installed at the crossing to prevent traffic crossing the rail line when a train is approaching.
- There is a distance of approximately 36 metres between the new Western Road crossings and the sidings which will allow reasonable line of sight.

ALCAM rankings are still under development by the Federal government and have not been finalised. Project applicants would conduct ALCAM assessments at the Project application stage if necessary.

c) Whilst there may be increased traffic along Industrial Drive and associated increased safety risks, there is no residential land use to the east of Industrial Drive and therefore no crossing movements of Industrial Drive are likely to be made in the context of the school. This would suggest that an increase in traffic on Industrial Drive would not significantly impact pedestrian safety to the school. Entry and pick-up/drop-off locations for the two schools are in the local streets and not on Industrial Drive. Therefore, increased truck movements on Industrial Drive are not likely to impact these school-related traffic activities. In addition, NPC is committed to ensuring that no heavy vehicle movements generated from the proposed concept are able to enter the existing residential road network.

d) This is an enforcement issue for the traffic authority (RTA).

e) With regard to Emergency Services vehicle response times, the traffic congestion is generally confined to the peak hours, which is a relatively small period of the day, and the travelling public generally gives priority to Emergency Service vehicles in an emergency situation.

3.4.6 Mitigation/Management/Monitoring

Submission Numbers

23, 31, 62, 89

Summary of Issues

The following issues were raised by respondents:

a) Suggestion that due to the increased rail movements which would require closure of the road at the Selwyn Street level crossing, there may be a future need for a grade separated crossing.

b) Increase in rail traffic may lead to the need for upgrades and maintenance of the existing rail infrastructure.

c) Recommendation that LATM works and road improvements are undertaken, including a roundabout at the intersection of Ingall Street and George Street and traffic calming devices along Ingall Street, Crebert Street and George Street. Community consultation should be carried out with all residents affected by the traffic management devices.

d) There is potential that light traffic thoroughfare zones would be introduced within the Mayfield area. NPC would be required to abide by any recommendations of the Newcastle City Traffic Committee.

e) Recommendation that a TMP is prepared in consultation with surrounding land owners, Council and the RTA. The plan should identify any new roads which may need to be constructed across land which is not owned by NPC. Any traffic impacts on surrounding land owners and operators should be minimised.

f) Recommendation that a Rail Infrastructure Management Plan be prepared in consultation with surrounding land owners and operators of the rolling stock and track owners or operators.

Response

a) As detailed in Section 9.2.3 of the EA, both the Selwyn Street railway crossing and the new western road crossing of the railway line would need to be assessed for treatment to separate rail and road movements, although a full barrier would likely be required (for initial operations). Over the longer term timeframe of the Concept Plan as container volumes and both truck and rail movements increase, the at grade crossings of the rail line may constrain truck movements and the efficiency of port operations. As a result it may be necessary to carry out works to grade separate road and rail movements at one or more crossing locations.

b) There will be a range of upgrades carried out to the local rail infrastructure in association with the Concept Plan including:

- Installation of a new crossover between the number 6 and 7 roads in the Morandoo Sidings (required for initial operations).
- Development of two rail sidings (required for initial operations) and an exit road (once rail operations reach two trains per day) within the NPC site.
- The existing OneSteel siding may need to be re-signalled to allow multiple train movements (required for initial operations).

If upgrade or maintenance to infrastructure is required on the wider regional rail network (e.g. NSFC project) then this will be the responsibility of agencies such as Transport NSW, ARTC, and Railcorp.

c) Section 5.6 of the revised Transport Assessment recommends that designated truck routes, with the exclusion of the existing residential road network for use by heavy vehicles, be included in the TMPs. It is recommended that LATM plans be prepared by Project applicants during the detailed Project application stage.

d) Noted and agreed.

e) TMPs would be prepared in consultation with appropriate stakeholders, RTA and Council.

f) As detailed in Section 11.4.3 of the EA, NPC would establish a Train Operations Plan for proposed movements within the Morandoo Yard and the site. This plan would be developed in consultation with other rail operators, the Terminal Operation Coordinator and the Signaller at Port Waratah Loop.

3.5 Noise

3.5.1 Operational Noise

Submission Numbers

5, 13, 18, 30, 36, 44, 95, 99, 114, 177

Summary of Issues

The following issues were raised by respondents:

a) Concern regarding the impact of increased noise levels on school children and community members. Learning environment at local schools such as the Hunter Christian School may be impacted by increased noise pollution from an increase in truck movements associated with the proposed concept. Propose that noise walls be installed along the perimeter of the Hunter Christian School where noise impacts are predicted.

b) Concern over the 7 dBA exceedance of the noise criteria during the night period at Crebert Street, Mayfield and Stockton. The statement in the EA that exceedances are 'not excessive or unmanageable' is misleading and incorrect. Any predicted exceedance over 4 dBA is considered to be a significant impact under the current guidelines.

c) Concern over the potential impact of increased noise levels on the residents of Tighes Hill. This should be included in the noise assessment, as this was considered a sensitive receptor for the air quality assessment.

Response

a) The Hunter Christian School is located in Mayfield, approximately 1.5 kilometres to the west of the site and approximately 1 kilometre to the north-west of the Crebert Street, Mayfield noise monitoring location. As detailed in Section 9.3.3 of the EA, noise levels at Crebert Street during the daytime anticipated to be 45 dBA and are below the established noise criteria. The INP internal noise goal for schools is 35 dBA for the noisiest 1 hour when the school is in use. This translates to an external noise goal of 45 dBA, assuming a classroom window is open. Since the Hunter Christian School is located further from the site than the Crebert Street, Mayfield noise monitoring location, noise emissions from operations at the site anticipated to be lower than 45 dBA and are not predicted to adversely impact on the amenity of the school during the daytime hours when the school is occupied.

   As documented in Section 9.3.3 of the EA, the residences nearest to Industrial Drive are currently subject to relatively high traffic noise levels which already exceed Department of Climate Change and Water (DECCW) noise criteria without the proposed concept. With the addition of traffic associated with the proposed concept, it has been determined that traffic noise at residences to the north of Ingall Street, Mayfield (Location A) would be acceptable in the day period, whereby there would be an increase of less than 2 dBA compared to the scenario without the proposed concept. The Hunter Christian School is located north of Ingall Street, adjacent to Location A and therefore traffic noise would also be acceptable at the school during the day period when the school is occupied.

   Based on the results of the operational and traffic noise assessments, installation of a noise wall along the perimeter of the Hunter Christian School is not warranted.

b) As detailed in Section 9.3.3 of the EA, predicted noise levels from operations at the site indicate that the potential for noise impact at surrounding residences would be greatest in the night period when adverse weather conditions (temperature inversions) occur. Noise criteria exceedances of up to 7 dBA during the night period in the worst case conditions are predicted at Crebert Street, Mayfield and at Stockton. It is important to note, that these exceedances are for operations at the site without the use of noise mitigation measures.

   A predicted "worst case" exceedance of 7 dBA at Crebert Street, Mayfield and at Stockton is not considered excessive in the context that no noise mitigation measures were included in the noise modelling. As a result, it was recommended that noise mitigation measures presented in Section 9.3.4 of the EA be considered for implementation by Project applicants. For example, it was recommended that the design of loading or unloading facilities of future developments should take into consideration Mayfield and Stockton residences in particular. Reductions in potential noise impacts can be achieved by:

   - Reductions in the order of 5 to 10 dBA can be readily achieved by strategically locating noise barriers and buildings in proximity of noise sources.

- Reduction in the order of 20 dBA can be achieved by constructing enclosures and/or buildings around noise sources requiring mitigation.
- Reductions of up to 10 dBA can be achieved by using acoustically treated motors and high performance silencers on equipment.

By way of clarification, the noise exceedances identified in Section 9.3.4 of the EA are able to be controlled to meet the noise criteria with the use of appropriate noise mitigation measures. Further detailed noise modelling and consideration of mitigation measures would be undertaken as part of future Project applications.

c) The residences at Tighes Hill are at a greater distance from the site than Mayfield residences. Therefore, addressing noise emissions to protect the amenity of residences in Mayfield would also protect the acoustic amenity of residences in Tighes Hill.

3.5.2 Modelling

Submission Numbers

5, 30, 31, 63

Summary of Issues

The following issues were raised by respondents:

a) Concern that the dataset presented is limited and not supplemented by previous noise studies and their relevant outcomes. This detail should have been included and used in the EA to aid development of an appropriate noise goal. The limited dataset also leads to uncertainties regarding the number of residences affected.

b) The figures in the Noise Assessment that present the noise modelling results are too coarse and cannot be accurately interpreted. The figures should:
   - Show individual noise sources.
   - Identify and explain the intervening structures.
   - Identify streets more clearly.

c) Noise levels were not measured at Stockton and therefore there is a reluctance to accept the Rating Background Level's (RBL) and derived criteria for Stockton. Evening and night-time RBL's higher than daytime RBL's need to be addressed in accordance with DECCW's Application Notes for the *NSW INP*.

d) Noise graphs for Carrington suggest that a day time noise source was influencing logger measurements between Monday and Saturday which could affect the derived criteria.

e) Suggestion that Stockton should be categorised as "Suburban" instead of "Urban" as the Indicative Noise Amenity Area. Changes to the suburban classification at Stockton may result in greater exceedances than 7dBA. Also, it is not demonstrated that the categorisation of 32 Elizabeth Street Carrington as "Urban/Industrial Interface" is justified.

f) Concern that there was no analysis of the frequency of worst-case meteorological conditions. Therefore the frequency of significant noise exceedances is uncertain.

g) Details on the number of residents affected should be provided.

Response

a) Noise logging and attended measurements were conducted at residences close to the site in Mayfield and Carrington. These measurements were taken in accordance with DECCW INP procedures. Reliance on noise data contained in dated noise assessments is not recommended when recent noise measurements conducted for this specific project can be relied upon.

b) The output figures from the "Cadna A" acoustic noise prediction software have been enhanced and provided as **Figures 3-1** and **Figure 3-2** of this Submissions Report. The modelled individual noise sources at the site are shown as blue crosses on the figures and marked A, B, C and D. The intervening structures shown to the south east of noise monitoring location B are the former BHP buildings, including the Administration building, that have been retained on the IIP site. The noise contours have been lightened to show the base layer more clearly.

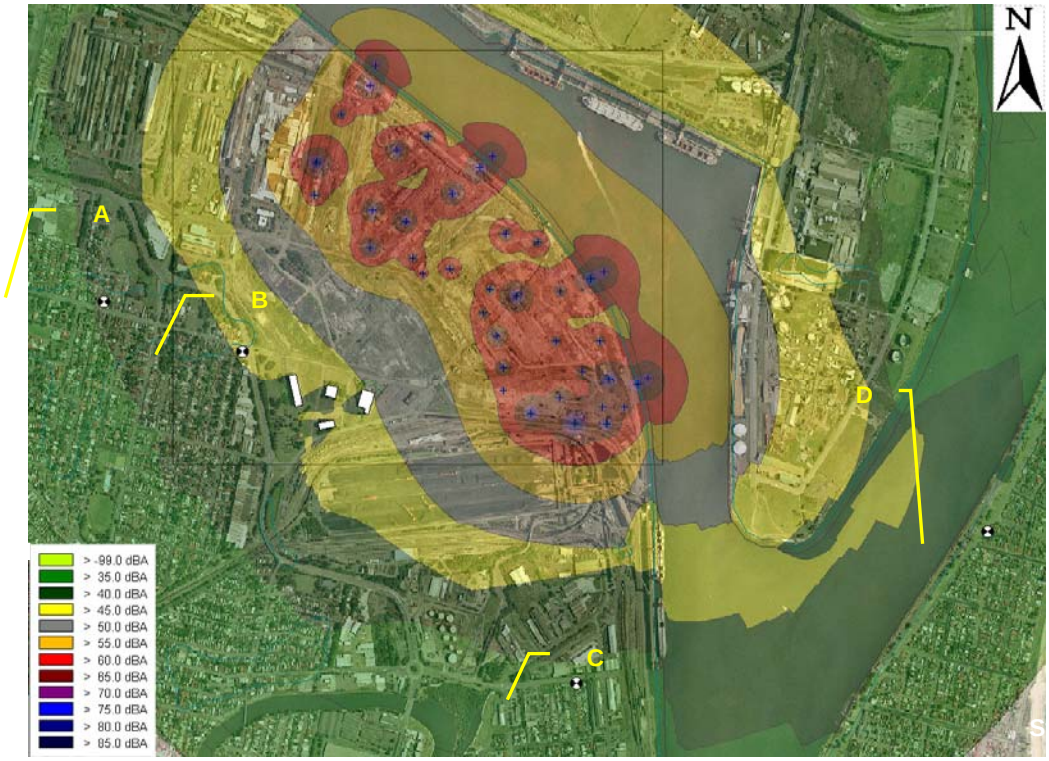

Figure 3-1 $L_{Aeq,\ 15minute}$ **Daytime Noise Levels for 2034 Site Operations – Neutral Conditions**

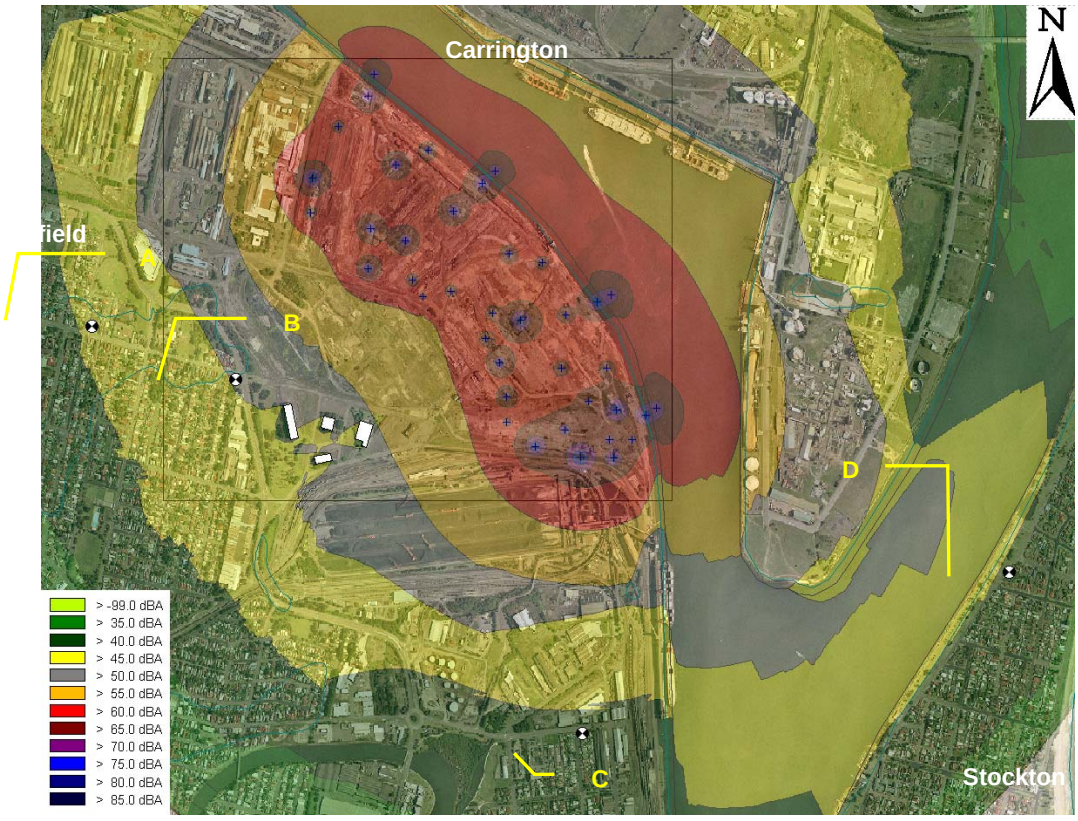

Figure 3-2 $L_{Aeq,\ 15minute}$ **Night Time Noise Levels for 2034 Site Operations – Temperature Inversion Conditions**

c) Noise levels were not measured at Stockton, rather noise logging and operator attended noise measurements conducted for other recent projects were relied upon for information on existing noise levels.

Numerous environmental studies have been conducted on the impact of Kooragang Island industry on residences at Stockton. A recent study involved the expansion of the Orica facility at Kooragang Island. In the noise assessment prepared by Atkins Acoustics and Associates Pty Ltd in February 2009, noise logging was conducted at three locations at Stockton, whereby the lowest night time rating background level (RBL) was determined to be 46 dBA. Review of the noise measurements indicated that 46 dBA is an appropriate level on which to base an intrusive noise goal for Stockton residences.

In addition, as result of attended measurements at the Stockton boat ramp by Wilkinson Murray, an industrial noise contribution of 47 dBA was determined. As a result, a night amenity noise goal of 37 dBA has been established (refer to **Table 3-2** of this Submissions Report).

d) The noise graphs referred to in the submission are provided in Appendix B of the Noise Assessment which is provided as Appendix E of the EA. Based on these noise graphs, Section 9.3.1 of the EA notes that Carrington is affected by existing industrial noise from nearby industry and to a lesser degree by noise from the Carrington Coal Loader. Carrington is affected by existing industrial noise primarily during the day, but is also affected to a lesser extent in the evening. The contribution from existing noise sources has been taken into account in establishing the project-specific day time amenity noise criteria for Carrington. The project-specific day time noise criteria for Carrington are presented in **Table 3-2** of this Submissions Report.

e) The Noise Assessment in the EA classified Stockton as “urban” and Carrington as “urban/industrial interface” for the purposes of developing project-specific noise criteria at the representative noise receptors located in these suburbs. Based on the comment that Stockton ought to be classified as “suburban” and Carrington ought to be classified as “urban”, the project-specific noise criteria at the representative noise receptors in these suburbs has been revised and presented in **Table 3-2** of this Submissions Report. Where there are changes to the noise criteria, the revised criteria are presented alongside the criteria presented in the EA, which are shown in parentheses.

Table 3-2 Revised Project-Specific Noise Criteria at Residences

Location	Area	Intrusiveness $L_{Aeq,15min}$ (dBA)			Amenity $L_{Aeq,period}$ (dBA)		
		Day	Eve	Night	Day	Eve	Night
A - 1 Arthur Street, Mayfield	Urban	51	52	51	60	49	43
B - 2 Crebert St, Mayfield	Urban	54	47	45	60	50	43
C -32 Elizabeth Street, Carrington	Urban	49	48	44	57 *(65)*	44 *(49)*	45 *(50)*
D -Stockton	Suburban	46	46 (48)	46 (48)	55 (60)	37 (47)	37

Note: Based on the comment that Stockton ought to be classified as “suburban” and Carrington ought to be classified as “urban”, the project-specific noise criteria at the representative noise receptors in these suburbs has been revised. The revised criteria are presented alongside the criteria originally presented in the EA (which are shown in parentheses).

In revising the project-specific noise criteria, the existing industrial noise contribution at residences in Carrington has been estimated as 57 dBA and 54 dBA for the day and evening periods, respectively. At Stockton the existing industrial noise contribution at residences has been estimated as 47 dBA for both the day and evening periods.

The predicted noise levels for the proposed concept at full development (2034) was assessed in Section 9.3 of the EA with respect to the lower of the amenity or the intrusive project-specific noise criteria. Because the change in classification of Carrington to “urban” and Stockton to “suburban” does not result in a change to the most stringent of the amenity or intrusive project-specific noise criteria during the day or night, the findings as presented in Section 9.3.3 of the EA do not change. The findings remain that noise criteria exceedances of up to 7 dBA during the night period are predicted at Crebert Street, Mayfield and at Stockton, and an exceedance of up to 2 dBA are expected during the night period at Arthur Street, Mayfield. There would be no exceedances during the night period at Carrington. The finding that noise levels at all

surrounding residences are expected to be below the noise criteria for the day time period is also unchanged.

f) The adverse weather conditions that have been assessed are detailed in Section 4.2 of the Noise Assessment. The Noise Assessment adopted a 3 degree per 100 metres inversion condition at night as representative of the "worst case" meteorological condition. It is this condition that the DECCW INP indicates should be assumed for a worst case assessment at night. The DECCW INP specifies when an assessment of adverse weather conditions should be assessed, that is when certain conditions are exceeded for 30 percent of the time in any given period. The DECCW INP does not provide a method which quantifies the frequency or likelihood of significant noise exceedances, however, significant noise exceedances are likely to occur on at least 30 percent of winter nights (inversions are strongest in winter but are rare in summer).

g) The output figures from the "Cadna A" acoustic noise prediction software have been enhanced and provided as **Figure 3-1** and **Figure 3-2** of this Submissions Report. The noise contours on the figures have been lightened to clearly show the base layer. As a result, the predicted noise levels from operation of the proposed concept in 2034 at residential areas surrounding the site are also shown more clearly.

   It is important to note that **Figure 3-1** and **Figure 3-2** of this Submissions Report present the predicted noise levels from operation of the proposed concept without factoring in the use of noise mitigation measures. Based on the results of the noise modelling, it was recommended that noise mitigation measures be adopted by Project applicants for specific developments proposed at the site (refer to Section 9.3.4 of the EA). For example, it was recommended that the design of loading or unloading facilities at future developments should take into consideration Mayfield and Stockton residences in particular. Reductions in the order of 5 to 10 dBA can be readily achieved by strategically located noise barriers and buildings constructed in proximity of noise sources. Higher reduction in the order of 20 dBA can be achieved by constructing enclosures/buildings around noise sources requiring mitigation. Reductions of up to 10 dBA can be achieved by using acoustically treated motors and high performance silencers on equipment. Based on the findings of the noise assessment, the EA concluded that operational noise impacts associated with the proposed concept are manageable and can be mitigated to acceptable levels.

3.5.3 Traffic Noise

Submission Numbers

8, 62, 63, 89, 98

Summary of Issues

The following issues were raised by respondents:

a) The increased number of truck movements and associated noise (i.e. from compression braking) would seriously impact the quality of life in the area. Traffic noise would result in sleep interference for night shift workers and young children, and cause disruption to the learning environment of school students.

b) Noise from traffic generated by the proposed concept would be difficult to regulate via an Environment Protection Licence given that vehicles would be entering and leaving the site on public roads.

c) The potential exceedances of the traffic noise criteria should be revisited with regard to the likely impact additional heavy vehicle movements would have on residences.

Response

a) As detailed below in the response to the issue raised in **Section 3.5.3 (a)** of this Submissions Report, it is predicted that there would be an exceedance of DECCW traffic noise criteria during the night period at residences along Industrial Drive in the vicinity of Ingall and Crebert Streets. DECCW traffic noise criteria would not be exceeded during the day period. The recommended option to mitigate the night time noise impact associated with traffic is to provide façade treatments to identified residences so that the internal acoustic amenity of residences is protected during the night time and occupant's sleep is not disturbed. Since the results of the traffic noise assessment are based on traffic generation assumptions for the proposed concept in 2034, it was recommended that detailed traffic noise assessments be conducted under Project applications to determine the need for and timing of, traffic noise mitigation along Industrial Drive.

   Noise associated with compression engine braking is not typically part of traffic noise assessments because it is a function of individual truck driver behaviour. Compression engine braking is more likely to occur on steep grades or where trucks are braking to access a site entrance. This being the case, the most likely location where compression engine braking may occur is at the Selwyn Street site access from the Industrial

Drive/George Street intersection. At this location, residences are located to the west of Industrial Drive behind industrial buildings therefore the impact of any compression engine braking would be reduced due to the shielding provided by the industrial buildings.

Installation of signs at the entrance of the site requesting drivers not to use compression engine brakes would mitigate potential impacts associated with compression engine braking. It is recommended that Noise Management Plans to be prepared by Project applicants include this mitigation measure.

b) Noted and agreed. However, as detailed in Section 4.3.3 of this Submissions Report, TMPs would be prepared to manage traffic movements to and from the site. Heavy vehicles associated with the proposed concept would be precluded from using the existing residential road network.

c) As detailed in **Section 3.4.2** of this Submissions Report, the Transport Assessment was revised to adopt a background traffic growth rate of 1 percent and a truck container load assumption of 1.8 TEUs/truck. Based on these changes, the traffic noise impact assessment in Section 9.3.3 of the EA was updated and the results are presented below.

The assessment of traffic noise impact has been conducted at the same three residential locations at residences on Industrial Drive, namely north west of Ingall Street, south of George Street and at Crebert Street (refer to Figure 9-4 of the EA). **Table 3-3** of this Submissions Report presents the original and revised results of traffic noise predictions at these residential receivers. Where there are changes, the original results are shown in parentheses.

Table 3-3 Predicted 2034 Industrial Drive Traffic Day and Night Noise Levels

Roadway	Traffic Noise Levels (dBA)		Predicted Increase in Traffic Noise (dBA)	Noise Criteria $L_{Aeq(15\ hr)}$ / $L_{Aeq(9\ hr)}$
	No Development	With Development		
Location A – North of Ingall Street Day Night	 72.1 (71.3) 64.4 (64.5)	 73.4 (72.7) 67.7 (67.1)	 1.3 (1.4) 3.3 (2.6)	 60 / 55
Location B – Crebert Street Day Night	 72.1 (71.3) 64.4 (64.5)	 73.3 (72.7) 67.5 (67.1)	 1.2 (1.4) 3.1 (2.6)	 60 / 55
Location C – South of George Street Day Night	 72.1 (71.3) 64.4 (64.5)	 72.5 (71.7) 65.5 (64.8)	 0.4 1.1 (0.3)	 60 / 55

The results indicate that noise levels at the nearest residences to Industrial Drive are subjected to relatively high traffic noise levels which exceed DECCW noise criteria with or without the proposed concept. Therefore the second noise objective, being that noise levels should not increase by more than 2 dBA as a consequence of the development, is applicable.

A review of predicted traffic noise levels indicates that the 2 dBA requirement is satisfied in all instances with the exception of residences on Industrial Drive in the vicinity of Ingall and Crebert Streets (Locations A and B) in the night period where an increase of 3.3 dBA and 3.1 dBA is anticipated, respectively. The original traffic noise assessment predicted an increase of 2.6 dBA during the night period at both these locations. Therefore, the findings in the EA that a noticeable change in traffic noise levels is likely to be experienced at these locations due to a predicted significant increase in heavy vehicle movements associated with the proposed concept does not change. It is also still anticipated that the night time exceedances in traffic noise levels would occur at the later stages of the development, when approaching peak operations.

Consistent with Section 9.3.4 of the EA, the recommended option to mitigate the identified night time noise impact associated with traffic is to provide façade treatments to identified residences on Industrial Drive in the vicinity of Ingall and Crebert Streets (Locations A and B) so that the internal acoustic amenity of residences is protected during the night time.

3.5.4 Mitigation/Monitoring/Management

Submission Numbers

30, 63, 114

Summary of Issues

The following issues were raised by respondents:

a) A computer-based noise prediction model should be established to facilitate the assessment of noise impacts for individual projects at the time each approval is sought, thereby effectively managing cumulative noise impacts from the site as a whole.

b) Further analysis of the noise impacts should be undertaken prior to determination of the Concept Plan, and that any proposed noise barriers be built into the noise model.

Response

a) It is recognised that management of noise emissions would be required on an ongoing basis to ensure that as the site is developed each specific land use is assessed in detail and appropriate noise mitigation is incorporated. As detailed in Section 11.5.2 of the EA, Project applicants would be required to input sound power levels (and the noise control measures if applicable) from their proposed project into an overall site noise model developed for NPC and determine whether the cumulative noise contribution at surrounding receivers is in compliance with the overall site criteria (presented in Table 11-5 of the EA). This aims to ensure that one development does not "use up" all the allowable noise criteria. NPC would update the overall site noise model to reflect compliance noise measurements from the operation of individual facilities and maintain the noise model for the site as a whole or cumulatively.

b) A noise assessment has been conducted as part of this EA in order to assess the potential noise impacts associated with the proposed concept. Consistent with the approach typically taken for Concept Plan noise assessments, the assessment has been conducted on likely "generic" operations within each precinct at the site. The exact type, configuration and detail of operations within each precinct will not be known until the detailed plans have been developed. Therefore, conducting further noise assessment at this stage would not provide any more detail regarding noise impacts. Each Project applicant would be required to prepare a detailed noise assessment for their individual operations.

   Noise modelling was conducted for the proposed concept without factoring in implementation of noise mitigation measures. As a result of the noise modelling, it was recommended that noise mitigation measures be considered for implementation by Project applicants to control noise emissions from site operations. The EA stated in Section 9.3.4 that reductions in the order of 5 to 10 dBA could be readily achieved by using noise barriers. Project applicants would conduct further detailed assessment of the benefits of installing noise barriers or other mitigation measures at the Project application stage.

3.5.5 Noise Criteria

Submission Numbers

5, 63

Summary of Issues

The following issues were raised by respondents:

a) The approach to establishing the precinct noise criteria presented in Table 11-5 of the EA appears to be in accordance with Section 2.2.4 of the DECCW INP. However, the method of deriving these numbers may not be in accordance with the INP. It is not clear in the EA whether amenity criteria have been derived from the measured ambient levels, or from estimates of the existing contribution from industry (the correct approach). Assessment criteria appear to be for intrusive noise ($L_{Aeq,15minutes}$) rather than based on the amenity level ($L_{Aeq,day/evening/night}$).

b) Concerns that the proposed concept assessment would represent the only cumulative noise impact assessment to be undertaken for the site. While the Concept Plan includes noise goals in the Performance Criteria, any future developments are unlikely to be assessed under one Project Approval, therefore any further noise assessments are likely to only apply to individual operators.

Response

a) The amenity noise criteria have been established based on estimates of existing industrial noise as per the INP procedures. Further, the controlling noise criteria for the assessment are conservatively based on the lower of the intrusive and amenity noise criteria.

b) Section 11.5 of the EA establishes an environmental performance criteria and management objective for noise, being to ensure noise generated by operations at the site, and from road and rail traffic travelling to and from the site, does not have an adverse impact on surrounding residential receivers. Each individual Project Application would be required to achieve this objective by meeting the performance criteria for both the overall site, and for individual precincts, presented in Section 11.5.2 of the EA.

   As detailed in Section 11.5.2 of the EA, Project applicants would be required to input sound power levels (and the noise control measures if applicable) from their proposed project into an overall site noise model developed for NPC and determine whether the cumulative noise contribution at surrounding receivers is in compliance with the overall site criteria (presented in Table 11-5 of the EA). This aims to ensure that one development does not "use up" all the allowable noise criteria and in doing so would give future developers the confidence and level of certainty required to invest in development at the site. NPC would update the overall site noise model to reflect compliance noise measurements from individual facilities and maintain the noise model for the site as a whole or cumulatively.

   As part of the Project Approval process, Project applicants would conduct further detailed assessments on the basis of a specific project. Such assessments would consider cumulative noise impacts associated with existing development, development of the site, and development of the IIP.

3.6 Air Quality

3.6.1 General

Submission Numbers

18, 89, 95, 114, 177

Summary of Issues

The following issues were raised by respondents:

a) Concern regarding the potential increase in air pollution. Specifically that carbon monoxide released from the large numbers of heavy vehicles would affect the health of nearby residents, particularly children.

b) Monitoring of Total Suspended Particulates (TSP) has been carried out at a location on George Street, Mayfield East since the year 2000, with results indicating higher existing TSP dust levels than those stated in the EA resulting in concerns over the stated levels in Table 9-49 of the EA.

Response

a) Carbon monoxide and other air pollutants were assessed in the Air Quality Impact Assessment (AQIA) Appendix F of the EA, by means of air dispersion modelling. On-site truck movements for 2034 (final operations) were included in the air dispersion modelling. The results showed that with the exception of particulate matter (PM_{10}) all pollutants (including carbon monoxide) were predicted to meet the DECCW criteria. PM_{10} exceedances were discussed in Section 9.4.3 of the EA, in the AQIA, and in **Section 3.6.2** of this Submissions Report. However, It would be preferable from an air quality perspective to achieve a higher modal split to rail rather than road transportation.

b) The AQIA used data supplied by HDC from their Mayfield monitoring station. The site is the closest HDC location to the concept plan site and was considered as an appropriate representation of the local background concentration based on available data. In addition, the AQIA made recommendations for the management and mitigation of dust emissions from the site, including monitoring of particulate levels and the use of 'best practice' management and technologies. These recommendations could be extended to include active engagement with the local community to address dust issues as suggested by PWCS.

3.6.2 Air Quality Modelling

Submission Numbers

31, 63, DoP verbal comment

Summary of Issues

The following issues were raised by respondents:

a) Air quality impacts on the neighbouring IIP have not been assessed as no receivers have been located on the site.

b) The AQIA predicts compliance with DECCW impact assessment criteria for all pollutants assessed except 24 hour average PM_{10}. Exceedances of the 24 hour average PM_{10} impact assessment criterion of 50 $\mu g/m^3$ was predicted at all sensitive receptors, however, this was due to assuming a worst case background concentration of 65.6 $\mu g/m^3$. A more refined assessment of background PM_{10} concentrations (i.e. contemporaneous assessment) was not included.

c) Confirm the PM_{10} findings based on revisions to the Transport Assessment (refer to **Section 3.4.2** of this Submissions Report).

Response

a) The AQIA assessed air quality impacts for 2034 at two receptors within the IIP site close to the south western boundary. The receptors are labelled as receptors 1 and 3 on Figure 9-5 of the EA and represent currently used office buildings (including the Hunter Business Chamber and other offices). As detailed in Section 9.4 of the EA, with the exception of PM_{10} the concentration of all other pollutants were well below the assessment criteria at Receptors 1 and 3. The ground level concentrations provided in the figures section of the AQIA (Figures F3 to F15) demonstrates that all pollutants other than PM_{10} met the relevant DECCW criteria at all locations within the IIP site.

   In response to issues raised by respondents, additional air dispersion modelling was undertaken to predict the incremental and cumulative 24 hour PM_{10} impacts of the proposed concept on the future IIP. The modelling assessed the impacts at one location bordering the proposed concept site and the IIP site (located adjacent to the Container Terminal Precinct). The original modelling suggests that this is the worst case location for the 24 hour PM_{10} ground level concentrations within the IIP site. Since it is unlikely that an actual receptor would be located on the site boundary, the modelling is considered to overestimate the potential impacts and provides a worst case scenario.

   The methodology used for the assessment is similar to that applied in the AQIA (refer to Section 8.2 of the AQIA) and is briefly described below. Predicted ground level 24 hour PM_{10} concentrations were assessed at the selected worst case IIP sensitive receptor discussed above. **Table 3-4** shows the contemporaneous cumulative concentration (which shows the maximum 24 hour value predicted when taking into consideration the modelled predictions, measured background data, and the estimated future concentrations based on published impact assessment reports for other major developments in the area (discussed in Section 9.2 of the AQIA)) and the number of criterion exceedances in addition to those already observed in the background data.

   The HDC background data used in the original AQIA was not available as hourly average concentrations as required for a contemporaneous assessment (for contemporaneous assessments, the hourly model predictions are added to the background pollutant concentrations recorded during the same hours to generate a cumulative concentration that pairs predictions and measured concentrations in time). The contemporaneous assessment was conducted in accordance with the NSW DECCW Approved Methods. As such, hourly average concentration data obtained from the Newcastle DECCW monitoring station was used in place of the HDC data. As the two sites are not co-located, the background values may differ from those used in the original modelling.

Table 3-4 Maximum Predicted Ground Level Pollutant Concentrations at the Proposed Concept/IIP Site Boundary Receptor

Receptor ID	24 hour PM_{10} Concentration ($\mu g/m^3$)	Additional Exceedances of DECCW Criterion
	Cumulative Concentration	
Proposed Concept/IIP Boundary	**62**	6
Criterion	*50*	-

Exceedances are noted in ***bold*** text

The data presented in **Table 3-4** demonstrates that:

- The maximum cumulative 24 hour PM_{10} concentration exceeds the criterion.
- When considered contemporaneously there are six additional exceedances of the criterion as a result of the proposed concept plan operations in 2034.

The maximum 24 hour PM_{10} incremental concentration (impact due to the concept plan operations alone i.e., no background data added) was 12 ug/m^3 which met the DECCW criterion. This suggests that the contribution of the concept plan operations is relatively minor in comparison to the background and cumulative concentrations.

To further illustrate the PM_{10} contemporaneous assessment results provided in **Table 3-4,** the below data review is presented. The objective of the review is to highlight that the measured background concentration is the primary reason for the high cumulative concentrations and that the impact from the concept plan operations alone in 2034 have a relatively minor contribution to the predicted maximum 24 hour PM_{10} concentrations and to the criterion exceedances.

Table 3-5 shows the maximum predicted PM_{10} 24 hour incremental concentration together with the background value that corresponds to that specific 24 hour period. The objective of this review is to show the likely cumulative concentration when the concept plan operations in 2034 is likely to have the greatest influence. The cumulative result of these two values is presented and shows that the DECCW criterion would be met at the receptor bordering the proposed concept and the IIP sites. This suggests that during the 24 hour period when the concept plan operation is predicted to have its maximum contribution the DECCW criterion is met, which suggests that the background PM_{10} concentration is the dominant influence on the cumulative PM_{10} levels.

Table 3-5 PM_{10} 24 Hour Predicted Ground Level Concentrations at the Proposed Concept/IIP Site Boundary Receptor

Receptor ID	24 hour PM_{10} Concentration ($\mu g/m^3$)		
	Maximum Predicted Incremental concentration	Measured Background Concentration During Corresponding 24 Hour Period	Associated Cumulative Concentration Based on Maximum Predicted Increment
Proposed Concept/IIP Boundary	12	24	36
Criterion	50		

Table 3-6 presents the maximum 24 hour PM_{10} background concentration together with the incremental value that corresponds to that specific 24 hour period. The objective of this table is to show the relatively minor contribution that the concept plan operations in 2034 have to the maximum 24 hour PM_{10} cumulative concentration. This table shows that the measured background concentration is above the DECCW criterion, the incremental value is below the criterion, and the cumulative value is above the criterion. The cumulative value is also the maximum cumulative value measured for the entire modelling period. This suggests that the contribution from the proposed concept plan operation in 2034 during the maximum background and cumulative concentration is relatively minor, and that the background PM_{10} concentration is the dominant influence on the cumulative PM_{10} levels

Table 3-6 Maximum Predicted PM_{10} 24 Hour Ground Level Concentrations at the Proposed Concept/IIP Site Boundary Receptor

Receptor ID	24 hour PM_{10} Concentration ($\mu g/m^3$)		
	Maximum Background Concentration	Incremental Concentration During Corresponding 24 Hour Period	Associated Cumulative Concentration Based on Maximum Background Increment
Proposed Concept/IIP Boundary	61	1	**62**
Criterion	50		

Exceedances are noted in ***bold*** text

The results of the assessment suggest that although exceedances of the DECCW criterion for 24 hour PM_{10} are predicted at the boundary between the proposed concept and the IIP sites, the contribution of the proposed concept plan operations to these exceedances is minor. Future Project applicants would be required to conduct air quality impact assessments for their individual developments.

b) In order to predict the worst case future cumulative pollutant concentration in the AQIA, a review of the predicted impacts of the major developments surrounding the proposed concept site was undertaken (refer to Section 9.2 of the AQIA). As a summary, published impact assessment reports were reviewed and a summary of the predicted pollutant impacts from each surrounding development on the Mayfield port-side lands (the concept plan development area) was provided. These predicted values, together with the locally measured pollutant concentrations, were included in the calculation of the background levels to predict the cumulative impact of the proposed concept on the local area.

A contemporaneous assessment was not undertaken in the original AQIA because of the method used to calculate the background value (using maximum measured HDC and literature values) and due to the relatively minor contribution (approximately 8 percent) of the proposed concept plan operations to the predicted cumulative 24 hour PM_{10} concentration.

A contemporaneous assessment of the concept plan operations has been undertaken for this response using background PM_{10} concentration data obtained from the DECCW Newcastle monitoring station for the year 2006, as detailed above.

Predicted ground level 24 hour PM_{10} concentrations were assessed at the identified sensitive receptor locations from the AQIA (Receptors 1 through 14 which are shown on Figure 9-5 of the EA). **Table 3-7** shows the contemporaneous cumulative concentrations (as previously described) and the number of criterion exceedances in addition to those already observed in the background data exceedances.

Table 3-7 Maximum Predicted Ground Level Pollutant Concentrations at Sensitive Receptor Locations

Receptor ID	24 hour PM_{10} Concentration ($\mu g/m^3$)	Additional Exceedances of DECCW Criterion
	Cumulative Concentration	
1	**61**	0
2	**61**	0
3	**61**	0
4	**61**	0
5	**61**	0
6	**61**	0
7	**61**	0
8	**61**	0
9	**61**	0
10	**61**	0
11	**61**	0
12	**61**	0
13	**61**	0
14	**61**	0
Criterion	*50*	

Exceedances are noted in ***bold*** text

The data presented in **Table 3-7** demonstrates that:

- The maximum cumulative 24 hour PM_{10} concentration exceeds the criterion at all receptors; and
- When considered contemporaneously there are no additional exceedances of the criterion at any of the receptors as a result of the proposed concept plan operations in 2034.

To further illustrate the PM_{10} contemporaneous assessment results provided in **Table 3-7,** the below data review is presented. The objective of the review is to highlight that the measured background concentration is the primary reason for the high cumulative concentrations and that the impact from the concept plan operations alone have a relatively minor contribution to the predicted maximum 24 hour PM_{10} concentrations and to the criterion exceedances.

Table 3-8 shows the maximum predicted PM_{10} 24 hour incremental concentration for each sensitive receptor together with the background value that corresponds to that specific 24 hour period. The objective of this review is to show the likely cumulative concentration when the concept plan operations in 2034 have the greatest influence. The cumulative result of these two values is presented and shows that the DECCW criterion would be met at the selected receptors. This suggests that during the 24 hour period when the concept plan operation is predicted to have its maximum contribution the DECCW criterion is met. This suggests that the background PM_{10} concentration is the dominant influence on the cumulative PM_{10} levels.

The maximum 24 hour PM_{10} incremental concentration (impact due to the concept plan operations in 2034 alone i.e., no background data added) was 5 ug/m^3 (Receptors 1, 3, and 4 which are shown on Figure 9-5 of the EA) which met the DECCW criterion (refer to **Table 3-8**). This suggests that the contribution of the concept plan operations is relatively minor in comparison to the background and cumulative concentrations.

Table 3-8 PM_{10} 24 Hour Predicted Ground Level Concentrations at Sensitive Receptor Locations

Receptor ID	24 hour PM_{10} Concentration ($\mu g/m^3$)		
	Maximum Predicted Incremental Concentration	Measured Background Concentration During Corresponding 24 Hour Period	Associated Cumulative Concentration Based on Maximum Predicted Increment*
1	5	31	36
2	4	37	42
3	5	25	30
4	5	25	30
5	4	26	30
6	3	26	29
7	3	26	29
8	4	28	32
9	3	28	31
10	4	26	29
11	3	26	28
12	2	26	28
13	2	26	27
14	1	22	23
Criterion	50		

Exceedances are noted in ***bold*** text

* Figures may not add up due to rounding.

Table 3-9 presents the maximum 24 hour PM_{10} background concentration together with the incremental value that corresponds to that specific 24 hour period. The objective of this review is to show the relatively minor contribution that the concept plan operations in 2034 have to the maximum 24 hour PM_{10} cumulative concentration.

This table shows that the measured background concentration is above the DECCW criterion, the incremental value is below the criterion, and the cumulative value is above the criterion. The cumulative value is also the maximum cumulative value measured for the entire modelling period. This suggests that the contribution from the proposed concept plan operation in 2034 during the maximum background and cumulative concentration is minor, which suggests that the background PM_{10} concentration is the dominant influence on the cumulative PM_{10} levels.

Table 3-9 Maximum Predicted PM_{10} 24 Hour Ground Level Concentrations at Sensitive Receptor Locations

Receptor ID	24 Hour PM_{10} Concentration ($\mu g/m^3$)		
	Maximum Background Concentration	Incremental Concentration During Corresponding 24 Hour Period	Associated Cumulative Concentration Based on Maximum Background Increment
1	61	< 0.1	61
2	61	< 0.1	61
3	61	< 0.1	61
4	61	< 0.1	61
5	61	< 0.1	61
6	61	< 0.1	61
7	61	< 0.1	61
8	61	< 0.1	61
9	61	< 0.1	61
10	61	< 0.1	61
11	61	< 0.1	61
12	61	< 0.1	61
13	61	< 0.1	61
14	61	< 0.1	61
Criterion	50		

Exceedances are noted in ***bold*** text

The results of the assessment suggest that no additional exceedances of the DECCW PM_{10} 24 hour criterion are predicted and that the contribution of the proposed concept plan operations to the cumulative concentration is minor.

c) Revision of the Transport Assessment resulted in an increase in truck numbers from 520,052 to 564,496 per year and from 1,425 to 1,547 per day in 2034. This represents an increase in trucks of approximately 8.5 percent from the truck numbers presented in the original Transport Assessment. As a result, it is estimated that the total mass emission rate of PM_{10} (the pollutant of most concern) from the entire concept would increase from 1.1799 g/s to 1.1802 g/s. The increased emission rate of 0.0003 g/s is less than 0.03 percent of the original total emission rate, and hence any additional contribution due to the increase in truck numbers is not anticipated to have a discernable impact on the predicted ground level concentrations.

3.6.3 Mitigation/Monitoring/Management

Submission Numbers

63, 82, 89, DoP verbal comment

Summary of Issues

The following issues were raised by respondents:

a) Implementation of best practice mitigation measures for the construction and operation of the proposed concept is supported by DECCW, in particular:
   - Incorporation of 'best practice' dust measures into the Air Quality Management Plan for the construction and operational phases of the proposal; and
   - Request that the site is maintained and operated in a condition which minimises or prevents the emission of dust from the premises.

b) Support berth design to allow for alternative marine power for vessels while at berth.

c) Questioned whether the PM_{10} environmental performance criteria set for the site (refer to Table 11-6 of the EA) is appropriate on the basis that background PM_{10} levels already exceed the criteria.

Response

a) Noted. Air quality modelling for the proposed concept found dust PM_{10} emissions to be a pollutant of concern from some operational activities associated with the proposed concept i.e. from the open bulk material stockpiles for sand. As part of the environmental and performance management requirements for the site (Section 11.6.3 of the EA), Project applicants would be required to prepare Air Quality Management Plans (AQMPs) addressing the operation of individual facilities at the site. Project applicants would be required to, in particular, identify the main potential dust sources and detail appropriate dust mitigation and management measures such as those identified in Section 9.4.4 of the EA. Measures include:

- Watering exposed surfaces and roads during construction.
- Covering loads during transport.
- Covering or watering exposed surfaces such as stockpiles.
- Adjusting work practices (as required) based on wind observations and on dust monitoring results.

b) Section 9.4.4 of the EA recommends providing alternative marine power for vessels while at berth as a measure to minimise the potential for impact from fuel combustion emissions from ships and also potential noise from ship generators.

c) The PM_{10} environmental performance criteria set for the site is consistent with the criteria set out by DECCW. It is also noted that as detailed in Section 9.4.3 of the EA, background levels of PM_{10} in the Newcastle area intermittently exceed the DECCW criteria for PM_{10} and TSP.

The DECCW criteria should be applied to the site of the proposed concept. If monitoring results indicate that the DECCW criteria are exceeded and such exceedances are not attributable to elevated background levels for the Newcastle area, potential on-site dust sources would be investigated and identified by operators where possible. Where potential on-site dust sources are identified the necessary corrective action would be taken as detailed in Section 11.6 of the EA. Where exceedances are due to elevated background levels corrective action would not be required by operators.

3.7 Hazard and Risk

3.7.1 Toxic Substances and Dangerous Goods

Submission Numbers

20, 23, 63, 92, 99

Summary of Issues

The following issues were raised by respondents:

a) It is recommended that construction of the underground fuel storage tank and unleaded petrol tank and bowser comply with the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008* as well as the CSMP.

b) The PHA does not address risks associated with the transport of dangerous goods to and from the site.

c) Concern that the storage and handling of hazardous goods may pose a risk to neighbouring land users. Clarification is required as to exactly where these goods would be stored on site and how NPC intends to handle them. NPC should be required to procure a hazard and operability (HAZOP) report.

Response

a) As part of the Final Statement of Commitments (refer to **Section 4** of this Submissions Report) NPC would commit to ensuring construction of the underground fuel storage tanks in the NPC Operations Precinct would be constructed in accordance with the requirements of the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008*, the *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008*, and the CSMP.

b) The main objective of the PHA is to identify potential hazards at the facilities. It would not normally include an assessment of transportation of Dangerous Goods to and from site apart from unloading activities. All transport of Dangerous Goods is expected to be carried out in accordance with *The Australian Code for the Transport of Dangerous Goods by Road and Rail* (known as the Australian Dangerous Goods Code or ADG), 7th ed., 2007, National Transport Commission. The assessment of transport of Dangerous Goods would be carried out by the transport companies for individual projects which have not been identified at this point in time.

c) A PHA was prepared for the proposed concept (Appendix G of the EA) with an objective to demonstrate whether or not the proposed concept poses a risk to adjacent facilities and the site itself. The methodology selected for the PHA was that prescribed in the Department of Planning Multi-Level Risk Assessment approach, supported by *Hazardous Industry Planning Advisory Paper (HIPAP) No.6 – Guidelines for Hazard Analysis*. The basic approach for the study was to conduct a hazard analysis, consequence analysis, and risk analysis.

As a result of the hazard analysis the following incidents were examined and were carried forward for consequence analysis:

- **NPC Operations Precinct.** Fuel release, ignition and fires as a result of storage and fuelling operations were identified hazards and carried forward into the consequence analysis. Port craft owned by Newcastle Port Corporation would be fuelled at Berth 1 adjacent to the NPC Operations Precinct, using an on-site underground diesel fuel storage tank (approximately 10,000 litres). NPC vehicles would also be refuelled at the precinct from an underground unleaded petrol tank (approximately 5,000 litres).
- **Bulk and General Precinct.** This precinct would not be used for the storage and handling of Dangerous Goods, however, fumigation operations for grain storage may be performed in this precinct using methyl bromide. Fumigant recapture equipment is available for fumigation operations and it is assumed that recapture equipment would be used to minimise the impacts from releases of fumigant gases at the Port. Therefore, release of fumigants was not carried forward into the consequence analysis.
- **General Purpose Precinct.** Handling shipping containers in this precinct may require fumigation operations using methyl bromide. However, it is assumed that recapture equipment would be used to minimise the impacts from releases of fumigant gases and therefore releases of fumigants was not carried forward into the consequence analysis. As mentioned previously, the general cargo handling facility Mayfield No. 4 Berth has been already approved within this precinct and commenced operation in 2010. This facility has approval for the handling of ammonium nitrate in a dedicated area located adjacent to the berth. Fire in the ammonium nitrate handling area leading to explosion with the potential to impact adjacent sites was carried forward into the consequence analysis.
- **Container Terminal Precinct.** Handling shipping containers in this precinct may require fumigation operations using methyl bromide. However, it is assumed that recapture equipment would be used to minimise the impacts from releases of fumigant gases and therefore releases of fumigants was not carried forward into the consequence analysis. There is a potential for Dangerous Goods to be transported using shipping containers and therefore hazards such as a flammable gas (including chlorine), liquid, or solids release and ignition/explosion was carried forward into the consequence analysis.
- **Bulk Liquids Precinct.** Receival, storage, blending and distribution of fuels and biofuels has the potential to result in a fuel release at the berth, resulting in ignition and pool fire. There is also potential for ignition of fuel in a storage tank, resulting in a tank roof fire. Release of fuel into a storage table bund could result in ignition and pool fire in the bund. These potential hazards were carried forward into the consequence analysis.

Each incident was assessed in detail in the consequence analysis and all incidents were assessed for impacts at specific heat radiation levels (fire), overpressure (explosion) and toxic gas impact (toxic gas release). The distances to the specific levels of consequence impact were calculated to determine whether the impact at the site boundary exceeded the acceptable impact criteria. Only two incidents were identified to have the consequence potential to impact areas off-site and were carried forward into the risk analysis. These incidents were:

- A leak from a chlorine drum valve within the Container Terminal Precinct leading to the development of a toxic plume which is directed towards the adjacent sites and residential areas by wind. A conservative drum leak frequency analysis was conducted and combined with the wind direction, weather conditions and the probability of fatality at the adjacent industrial land uses and/or injury at the closest residential area. The risk of injury and fatality was estimated to be 30 chances in a million per year (pmpy). The acceptable fatality and injury risk criteria is 50 pmpy. Hence, the assessed risk does not exceed the acceptable risk criteria and therefore the storage of the toxic gases would only constitute a potential hazard. Nevertheless, the risk may be reduced even further by implementation of an Emergency Response Plan for evacuation of the downwind occupied areas.

- Ammonium nitrate (AN) incidents within the General Purpose Precinct which could include fire, explosion and toxic plume. The risks associated with handling of ammonium nitrate were assessed prior to construction of Mayfield No.4 Berth. This analysis indicated that a fatality risk of 0.5 pmpy extended a maximum of approximately 40 metres from transit of ammonium nitrate. This risk is well contained within the General Purpose Precinct and therefore the risk criteria of 50 pmpy was not exceeded at the adjacent precinct.

Based on the analysis conducted, it was determined that the potentially hazardous areas within the site can be located such that they do not impact adjacent surrounding residential and industrial land uses (i.e. OneSteel, the future IIP, and Carrington Coal Terminal), and that potentially hazardous facilities can be located within specific precincts such that potential impacts do not overlap causing accumulation of risks. Therefore, the approach was to identify separation distances between the site boundary and individual precincts within which dangerous goods ought not to be located. Section 9.5.3 and Figure 9-6 of the EA detail the required separation distances based on assumptions made at the Concept Plan stage.

The PHA for the Concept Plan demonstrates that the proposed concept can be classified as potentially hazardous and not actually hazardous, and would be permitted at the proposed location under the provisions of *State Environmental Planning Policy No.33*.

It was recommended that a detailed PHA be conducted for each of the facilities proposed under subsequent Project applications to confirm the results of the PHA for the Concept Plan and to ensure that the detailed site layouts and Dangerous Goods storage quantities and operations do not result in the acceptable risk criteria being exceeded.

HAZOP studies are undertaken during the detailed design phase of projects, and therefore it is not appropriate for NPC to prepare a HAZOP study for the proposed concept.

3.8 Water Management

3.8.1 Surface Water

Submission Numbers

64

Summary of Issue

The following issue was raised by respondents:

a) The DGRs specified that the EA provide "*consideration of the land and water interface and any proposed waterfront structures*". NSW Office of Water's (NOW's) recommendations to the DoP in relation to the content of the DGRs was as follows:

"The assessment is required to consider the impact on riparian areas and provide the following in relation to *waterfront land* as defined in the *Water Management Act 2000*:

- An evaluation of the proposed methods of excavation, construction and material placement.
- A detailed description of all potential environmental impacts of any proposed development in terms of vegetation, sediment movement, water quality and hydraulic regime.
- A description of the design features and measures to be incorporated into any proposed development to guard against long term actual and potential environmental disturbances.
- Details of the impact on water quality and remedial measures proposed to address any possible adverse effects."

NOW requested that it be included in the DGRs that the assessment for the Berth Precinct provide a detailed description of the proposed waterfront structures including wharves, berthing facilities, foreshore reclamation and retaining walls, and provide details on the impact of these structures on the water body environment, including bed and bank stability and water flow and function.

Response

a) The EA focuses on the port land. However, the EA provides a conceptual description of the proposed waterfront structures of the berth precinct (refer to Section 5.2.6 of the EA) including indicative berth design, quay lines and sheet pile walling (which may be installed along the shoreline between the land and water-based areas at Berths 2 and 3 to provide stability along the foreshore).

Information provided in the EA from the context of the water interface has been included for context only. Impacts on the river have not been assessed at the concept stage as detailed design, and therefore methods of excavation and construction for waterfront structures is not yet known. Project applications for individual developments will provide a detailed description of waterfront structures and construction and operation methodology which will allow a detailed and robust assessment of potential environmental impacts at the land and water interface.

Based on the concept design, Section 9.6.2 of the EA addresses the potential for environmental impacts at the land and water interface in relation to groundwater movement and the proposed sheet pile wall. The sheet-pile wall at Berths 2 and 3, if constructed, would be for foreshore stability rather than hydraulic containment. It is typical for sheet-pile walls to allow some groundwater flow beneath the base of the wall, however, the amount of flow depends on the design of the sheet-pile wall, the depth of the wall, and the material into which the wall is anchored. Assuming a sheet-pile wall would be required at Berths 2 and 3, the design of the wall and future groundwater flow from this area of the site to the South Arm of the Hunter River would be determined at the Project application stage when design details are available.

3.8.2 Groundwater

Submission Numbers

63

Summary of Issue

The following issue was raised by respondents:

a) The EA does not provide any comment or commitment to conducting groundwater monitoring. Groundwater monitoring under the VRA dated 14 September 2005 must continue to be carried out until DECCW is satisfied that groundwater contamination is no longer significant.

Response

a) Groundwater monitoring is currently being conducted by HDC in accordance with the VRA. It is noted that in the long term, groundwater monitoring may be required as part of a Section 28 or 29 *Contaminated Land Management Act 1997* maintenance order.

Prior to construction, NPC would prepare a Groundwater Monitoring Plan (GMP) for the proposed concept, which would provide the framework for continued groundwater monitoring across the site. General information regarding the monitoring methods and frequency of sampling, reporting and responsibilities for monitoring would be included in the GMP.

As part of the GMP, each Project application would be required to prepare individual GMPs in accordance with the overarching GMP, which would ensure that groundwater monitoring and reporting requirements for each project application are coordinated, consistent and implemented. These GMPs would form sub-plans of the Operational Environmental Management Plans (OEMPs) for the individual Project applications.

Construction phase groundwater monitoring would be detailed in the Construction Environmental Management Plans (CEMPs) for the subsequent Project applications.

3.8.3 Contamination

Submission Numbers

63, 177

Summary of Issue

The following issue was raised by respondents:

a) There is potential for damage to the previously contoured and capped surface of Area 1 as a result of the proposed concept. Area 2 would also be contoured and capped. Capping and contouring may affect the groundwater recharge into the contaminated fill by way of ponding and infiltration of waters through the capped surface.

b) It is unclear how groundwater will be affected by the proposed development. There is concern that the EA does not adequately assess the potential impact on groundwater quality, a more comprehensive assessment is required to define the impact on groundwater and recirculated water at adjacent sites.

Response

a) As discussed in Section 9.9.1 of the EA, remediation works have been conducted at the site since 2006 in accordance with the 2001 consent, and are scheduled for completion in 2012. A VRA was prepared in conjunction with the Environment Protection Authority (EPA) (now DECCW) and HDC is currently responsible for implementing the VRA. NPC would not be responsible for any capping or contouring activities on-site.

   Remediation of the site is based on a strategy of containment (through capping and groundwater controls) rather than treatment. A subterranean barrier wall was installed in the centre of the site and extends around Area 1, acting to minimise further contamination of groundwater by blocking the horizontal flow through the main area of contamination in Area 1. In addition, a low permeability cap would be installed by 2012 in the northern portions of Area 1, and in Area 2 which will act to limit groundwater recharge into contaminated fill.

   The levels and grades achieved during re-contouring and capping under the VRA were designed to be compatible with anticipated future land uses. For example, the paved cap has been constructed to a level which is 400 millimetres below the finished surface levels to allow 'air space' for the construction of additional pavement thickness in the Container Terminal Precinct which requires heavy duty hardstands and stacking containers.

   Development of the Concept Plan would result in almost the entire site being covered with buildings and sealed surfaces such as hardstand areas, parking areas, roadways and railway line which would not give rise to erosion and would further limit groundwater recharge into the contaminated fill.

   NPC would oversee development of the site to ensure that it is carried out consistent with the VRA and CSMP. As outlined in Section 9.9.3 and Section 9.6.1 of the EA, development of the proposed concept would occur in a way that:

   - Would not cause surface and subsurface displacement of the barrier wall.
   - Would minimise disturbance of the cap wherever possible.
   - Would not compromise the remediation outcome for the site.
   - Would not compromise the ability to undertake groundwater monitoring from a number of groundwater wells across the site. Groundwater monitoring is currently carried out by HDC in accordance with the VRA.

b) Section 9.6.3 of the EA contains an assessment of the potential impact of the proposed concept on groundwater. Refer to the responses provided in relation to issues in **Section 3.8.3 (a)** and **3.8.2 (a)** of this Submissions Report for further information on groundwater.

3.8.4 Stormwater Drainage and Flooding

Submission Numbers

63

Summary of Issue

The following issue was raised by respondents:

a) The stormwater strategy identifies that trunk drainage infrastructure, as well as road and lot drainage, would be provided synergistically with future individual developments. While this is not inconsistent with the VRA, it would be preferable to have the drainage infrastructure installed in advance of any development at the site to ensure the drainage infrastructure is integrated and adequate.

Response

a) A site-wide Stormwater Management System (SMS) is to be prepared which would build on elements in the Preliminary Design Stormwater Strategy which have not been superseded by design changes. The design of the SMS would be coordinated across the site but would also reflect specific requirements of each precinct.

   The final design and arrangement of stormwater drainage infrastructure would be developed as part of the individual Project applications. The individual drainage systems would be designed in accordance with the overarching principles of the SMS described in Section 9.6.2 of the EA and integrated with the existing permanent stormwater infrastructure at the site.

3.8.5 Mitigation/Monitoring/Management

Submission Numbers

57, 62, 64

Summary of Issues

The following issues were raised by respondents:

a) The most significant issue arising from the proposed concept is the management of spillages and stormwater runoff from the site. This matter should be dealt with in the Stormwater Management Plan, which should ensure that no contaminated material enters the drains that convey water to the Hunter River.

b) Recommended that the objectives and water quality targets specified in Newcastle Development Control Plan 2005 be adopted for this proposed concept. Preparation of a water cycle management plan is required with stormwater harvesting off road areas for re-use and water quality controls considered important areas within the plan. The plan should clearly define who is responsible for the delivery, timing and funding of each element. All controls identified in the plan are to be retained in the ownership of the respective developments and under no circumstances should be transferred to the ownership of the City of Newcastle.

c) As the site lies at the bottom of the Hunter River catchment there is little value in retaining flows and such a strategy could in fact increase flooding in the area by detaining peak flows. Retention of stormwater flows should only be seen as a quality control and not quantity control measure.

d) Consideration of groundwater and surface water monitoring to be included in the CEMPs and OEMPs at the subsequent project application stage.

Response

a) It is agreed that this is an important issue but also one that is regularly addressed as part of developing land adjacent to ports. During construction of the proposed concept, works would be undertaken in accordance with CEMPs, the CSMP and appropriate environmental controls and work method statements that would be prepared for construction activities carried out across the site. Water quality impacts during construction would be managed according to the CEMPs that would be prepared for each Project application. The CEMPs would set out appropriate controls to manage and mitigate potential impacts on water quality and would outline appropriate response procedures for dealing with emergencies such as spills and leaks during construction activities. These controls would be detailed in a series of sub-plans including a Soil and Water Management Plan and an Emergency Response Plan for dealing with emergencies such as spills and leaks.

b) As described in Section 9.6.4 of the EA, a SMS is proposed for the collection and discharge of stormwater runoff and management of water quality, particularly the receiving waters of the South Arm of the Hunter River. The objective of the SMS is to minimise the impacts of stormwater runoff generated by the proposed concept on property, infrastructure and the receiving environment. The detailed design of stormwater systems for individual projects would be required to comply with the SMS, which would be designed in accordance with Newcastle City Council's consolidated Development Control Plan (NDCP, 2005) and other agreed specific design criteria and design principles set out in the CSMP. The stormwater systems would be designed in consultation with DECCW and Newcastle City Council. Individual operators would retain ownership of water quality and quantity controls and would be responsible for maintaining water management infrastructure and ensuring that it is functioning as designed.

c) Existing temporary detention basins at the concept site collect stormwater and promote the removal of sediment from stormwater through settling. These temporary basins would be superseded by stormwater quality improvement devices (SQUIDs). These SQUIDs would not be designed to provide retention of peak flows; their primary function would be to encourage settlement of pollutants and sediments out of stormwater prior to being discharged, thereby reducing the load of pollutants entering the South Arm of the Hunter River. The SMS and finished levels and gradients across the site would be designed to ensure that flood risk to projects within the site and to adjacent developments is minimised. Water sensitive urban design features such as vegetated swales and rainwater harvesting would be incorporated into the SMS. These features would have a beneficial impact on flood risk by reducing the volume and rate of stormwater discharge to the drainage network. Harvested stormwater (e.g. from buildings) would be stored and reused across the site for wash down areas, irrigation of landscaped areas and potentially for fire fighting, thereby reducing the quantity of mains water required.

d) HDC is currently undertaking groundwater monitoring as part of the VRA for the remediation works. Surface and groundwater monitoring to be undertaken during construction and operation would be detailed in the

CEMPs and OEMPs for the subsequent Project Applications. As detailed in the response to the issue in **Section 3.8.2 (a)** of this Submissions Report, a GMP would be prepared by NPC prior to construction. Individual operators would be required to comply with environmental performance standards for stormwater management and water quality improvement as set out in the SMS and as described in Section 11.8.2 of the EA. The environmental performance criteria would be refined and tailored for individual Project applications, with reference to relevant water quality objectives and targets specified in the NDCP (2005) or as agreed with regulatory authorities.

3.9 Heritage

3.9.1 European Cultural Heritage

Submission Numbers

2, DoP verbal comment

Summary of Issues

The following issues were raised by respondents:

a) All conditions of approval for the existing excavation permit are to remain in force for works impacting, Hunter River Smelting Co. Precinct, No. 1 Blast Furnace Precinct, No. 1 Blower House Precinct, No. 1 Pig Mill Precinct, No. 2 Blast Furnace Precinct, Ferro-Manganese Blast Furnace, Original Open Hearth Building Precinct, No. 1 Bloom and Rail Mill Building Precinct, Steel Foundry Precinct, DC Substation Precinct, Original Timber Wharves Precinct, No. 3 Blast Furnace Precinct, AC Saltwater Pump House Precinct, Mould Conditioning Building Precinct, No. 4 Blast Furnace Precinct and Basic Oxygen Steelmaking (BOS) Plant Precinct.

b) The No. 1 and 2 Pig Mill is outside the area of disturbance.

c) Criterion (e) – scientific on page 201 of the EA does not address the No 1 Blast furnace, but the No.1 Blast Furnace is listed as not having been archivally recorded in the last bullet point on page 196 in Section 9.7.2 of the EA.

Response

a) As outlined in Section 9.7.1 of the EA, HDC has been conducting the remediation works under the Excavation Permit No. 2005-S140-041 which was due to expire in September 2010. It is understood that HDC intend to renew and continue with the Excavation Permit to the extent necessary to complete the remediation works. The cut and fill plan prepared by HDC (refer to Figure 9-12 of the EA) indicated that cutting would take place across part or all of the following items as part of the remediation works:

- No. 1 Blast Furnace
- Ferro-Manganese Blast Furnace
- No. 2 Blast Furnace
- Hunter River Copper Smelting Co.
- No. 1 Blower House
- No. 3 Blast Furnace
- No. 4 Blast Furnace
- Open Hearth Change House
- Original location of No. 1 Pig Mill
- DC Substation
- Steel Foundry
- No. 1 Bloom and Rail Mill
- Soaking Pits Building

It is therefore understood that further archaeological works may not be required in these areas by NPC.

The remaining items listed below have been previously demolished and archivally recorded in 2000 prior to demolition, as stated in Section 9.7.1 of the EA. Heritage Branch has requested that these areas be monitored. NPC maintain that these items have already been demolished and archivally recorded and they are not archaeologically significant as archaeological investigation is unlikely to add to the current understanding of the items. It is considered that the archival recording prior to demolition adequately

addressed the historical significance of these items and no further mitigation measures are warranted. For clarification these items include:

- The AC Saltwater Pump House Precinct
- The Mould Conditioning Building Precinct (archivally recorded in 2000 as part of the Open Hearth Building and Open Hearth Change House Precinct)
- The BOS Plant Precinct
- The Original Timber Wharves Precinct

The conditions of consent of the Excavation Permit 2005/S140/041 would be included in the Statement of Commitments for future Project approvals. In addition, the project approvals would adopt the Research Design and Methodology approved under the Excavation Permit. The commitments would be triggered only if heritage items are to be impacted by the proposed project and those heritage items have not already been subject to adequate archaeological assessment, recording and salvage. The conditions would refer to the following items, as requested by the Heritage Branch:

- No. 1 Blast Furnace
- Ferro-Manganese Blast Furnace
- No. 2 Blast Furnace
- Hunter River Copper Smelting Co.
- No. 1 Blower House
- No. 3 Blast Furnace
- No. 4 Blast Furnace
- Open Hearth Change House
- Original location of No. 1 Pig Mill
- DC Substation
- Steel Foundry
- No. 1 Bloom and Rail Mill
- Soaking Pits Building
- No. 1 and 2 Pig Mills

b) The No. 1 and 2 Pig Mill is within the area of disturbance, but not within the area of cut and fill. This has been clarified with the Heritage Branch.

c) This was an error on page 196 of the EA. The No 1 Blast Furnace should not have been identified as having archaeological potential as it was archivally recorded prior to demolition in 2000.

3.9.2 Aboriginal Cultural Heritage

Submission Numbers

63

Summary of Issue

The following issue was raised by respondents:

a) An Aboriginal Cultural Education program must be included in the induction of all personnel and contractors. Recommendation that stop work provisions be put in place in the event that any item of Aboriginal Cultural significance is uncovered on-site.

Response

a) As outlined in Section 9.7.1 of the EA, a search of the National Parks and Wildlife Service (NPWS) Register of Aboriginal Sites (now known as the DECCW Aboriginal Heritage Information Management System (AHIMS) database) was carried out as part of the Environmental Impact Statement titled *Development of a Multi Purpose Terminal and Remediation of the Closure Area, BHP Newcastle Steelworks* (URS, 2000). No Indigenous heritage sites were identified through this search. It is considered highly likely that any Indigenous sites once present in the vicinity of the site would have been removed or destroyed during previous reclamation, construction, operational activities associated with the BHP Steelworks and recent remediation works conducted on site. Therefore, development of an Aboriginal Cultural Education program it is not considered necessary.

3.10 Infrastructure

3.10.1 Public Utility Services

Submission Numbers

23, 31, 62

Summary of Issues

The following issues were raised by respondents:

a) To the extent that it is considered necessary to obtain services (power, water, sewer etc) by means of easements or by other arrangements across land owned or occupied by OneSteel, OneSteel request that as a condition of the proposed concept approval, or any relevant operational consent, that an Access and Services Management Plan be prepared in consultation with OneSteel. It was also suggested that any significant infrastructure investments required to be made by NPC and the IIP should be integrated to achieve maximum benefit for all stakeholders.

b) Request for clarification as to when, where and by whom the public utility services would be provided to the site. Information is also requested on planning for the delivery, capacity and staging of the individual services.

Response

a) As discussed in Section 9.8.2 of the EA, three options exist for providing services as follows:

- **Connection to the IIP.** The IIP development would deliver trunk infrastructure in stages from which the concept site may connect. Whilst it is known that trunk infrastructure would be designed and installed within the IIP, these works do not fall under the proposed concept. As such, potential for connection and augmentation of trunk services through the IIP is an option but not certain. Potential for connection is dependent on the type of land use/development that will occur on the IIP site and the timing of such development.
- **Connection through OneSteel.** There are options to provide services to the site via connections to existing services provided to OneSteel.
- **Connection through existing service providers.** Infrastructure provision for all future Project applications falling under the proposed concept would need to consider the option of sourcing infrastructure from existing service providers where coordination cannot be achieved through the future IIP or OneSteel. Local service providers have advised that there is likely to be available capacity to service the proposed concept, particularly since there are a number of significant service upgrades planned for the area.

NPC has committed to preparing an Infrastructure Plan for the site to ensure coordination in relation to the provision of services across the site. As detailed in Section 11.10 of the EA, the Infrastructure Plan would identify service corridors to and within the site, detail coordination and cost sharing mechanisms, and include protocols for installation of services. NPC would consult with OneSteel and other neighbouring landowners during preparation of the Infrastructure Plan.

NPC has also committed to working with Project applicants regarding provision of services to the site via services corridors in a coordinated manner. NPC agrees that any significant infrastructure investments required to be made by NPC and the IIP should be integrated in a timely and equitable manner to achieve maximum benefit for all stakeholders.

b) Discussed in Section 9.8.2 of the EA, are general assumptions on the service and utilities load and infrastructure requirements for the proposed concept, taking into consideration the activities that would be undertaken in each precinct, the types of buildings and structures that would be provided at the site, and workforce requirements. However, it is acknowledged that at the Concept Plan stage service demand is difficult to determine and there is potential for many changes to influence the provision of infrastructure over this timeframe. Therefore it is recommended that Project applicants conduct detailed design and assessments of service requirements and provision of the necessary service and utility infrastructure at the Project application stage.

It is important to note that based on the information currently available, local service providers have advised that there is likely to be available capacity to service the proposed concept, particularly since there is a number of significant service upgrades planned for the area. The following service providers were consulted in regards to infrastructure provision for the proposed concept, responses were as follows:

- AGL (no response)
- Energy Australia in a letter dated 14 April 2010 advised that in the very early stages of the development, depending on the capacity required, it may be possible to meet some construction electrical requirements on the site by the existing 11kV mains. Total electricity requirements would need to be provided to Energy Australia at the earliest possible stage to determine whether sufficient capacity exists from the existing sub-stations or wether a new sub-station would be required.
- Hunter Water in a letter dated 16 April 2010 advised that preliminary investigations indicated that there appears to be capacity available within the water supply system to cater for the proposed development.
- Jemena in a letter dated 13 April 2010 advised that natural gas is available in the vicinity and could be extended to supply this proposal.

3.10.2 Infrastructure Corridors and Access

Submission Numbers

20, 31

Summary of Issues

The following issues were raised by respondents:

a) Developers of the IIP site have fielded expressions of interest from a number of organisations wishing to establish large scale facilities on the IIP site and these organisations have expressed an interest in gaining access to the berth facilities to be developed by NPC. The proposed concept does not make any allowance for any form of infrastructure corridors to facilitate this access.

Response

a) NPC will consider all requests for access to the berth facilities where it is beneficial to the Port of Newcastle.

3.11 Geology and Soils

3.11.1 Contamination

Submission Numbers

23, 62, 63, 64, DoP verbal submission

Summary of Issues

The following issues were raised by respondents:

a) Future project applications should not impinge on the completion of the remediation works. DECCW intends to regulate the ongoing maintenance of the site cap, barrier wall and groundwater monitoring under an ongoing maintenance order.

b) Suggestion that copies of the contamination reports be provided to Council for inclusion in the property's Planning Controls.

c) Future roads, stormwater infrastructure, footpaths or other assets that may be affected by contamination are not to be dedicated to Council unless the objectives and requirements of Element 4.2.3 DCP2005 are fully considered and met in their entirety.

d) Request that NPC be required to consult with OneSteel to ensure that any ongoing remediation is conducted in a way which adequately protects OneSteel and its on-site personnel and does not unreasonably interfere with the OneSteel business.

e) The CSMP specifies that an assessment of the risks to human health posed by the ingress of volatile vapours into buildings and confined spaces is required prior to commencement of construction of buildings and structures. Recommendation that the CSMP vapour management assessment requirement, specifically be adhered to, in particular at the location of the BHP Benzol Plant area.

Response

a) NPC is committed to ensuring that construction activities associated with subsequent Project applications would not commence until such time that DECCW determines contamination at the site no longer presents a significant risk of harm, or where DECCW determines that construction activities which start prior to completing remediation can be done so synergistically and without impact on the remediation outcome.

NPC would oversee development of the site to ensure that it is carried out consistent with the VRA and CSMP. Development would occur in a way that:

- Would not cause surface and subsurface displacement of the barrier wall.
- Would minimise disturbance of the cap wherever possible.
- Would preserve the remediation outcome for the site.
- Would not compromise the ability to undertake groundwater monitoring from a number of groundwater wells across the site. Groundwater monitoring is currently carried out by HDC in accordance with the VRA.

b) Reports on contamination referred to in Section 9.9 of the EA include:

- URS. *Development of a Multi Purpose Terminal and Remediation of the Closure Area, BHP Newcastle Steelworks* (2000).
- HDC. *Contaminated Site Management Plan* (2009).

It is assumed that the reports referred to in Submission 62 are those identified above. The HDC 2009 CSMP is appended to the EA as Appendix L. NPC will provide the URS 2000 report separately to Newcastle City Council. However, it should be noted that extracts from the URS 2000 Environmental Impact Statement (EIS) documenting the results of the site investigations are provided in Appendix J of the EA.

c) It is not NPC's intention to dedicate to Council any future roads, stormwater infrastructure, foot paths or other assets located at the site.

d) As discussed in Section 9.9.1 of the EA, remediation works have been conducted at the site since 2006 in accordance with the 2001 consent, and are scheduled for completion in 2012. A VRA was prepared in conjunction with the EPA (now DECCW) and HDC is currently responsible for implementing the VRA and completing remediation of the site. HDC is therefore responsible for ensuring that ongoing remediation does not impact upon OneSteel. NPC's obligation is detailed below in the response to issue **3.11.1(e)** of this Submissions Report.

e) NPC commits to developing the site in such a way as to preserve the remediation outcomes as set out in the VRA and achieve an acceptable level of risk to the environment and human health (as detailed in **Section 4.11.1** of this Submissions Report). As part of the Environmental and Performance Management criteria all development would be carried out in accordance with the VRA and the CSMP. Section 14 of the CSMP includes a discussion regarding vapour management and a number of requirements are listed that will need to be met.

To ensure the site functions in accordance with the Environmental and Performance Management criteria, NPC would:

- Oversee that development of the site to ensure that it is carried out consistent with the VRA and CSMP.
- Obtain confirmation from the Site Auditor that the design of the individual facilities complies with the requirements of the VRA and CSMP prior to the commencement of any works. Should there be any instances of non compliance, Project applicants would be required to alter the design or include appropriate management controls to obtain compliance.

As discussed in Section 9.9.1 of the EA, site monitoring of volatile gases conducted in December 2005, indicated the presence of volatile hydrocarbons in the vicinity of the former Benzol Plant of the BHP Steelworks (located in the area of the Bulk Liquid and Container Terminal Precincts). Vents have been installed in the low permeability cap to mitigate the potential build-up or migration of volatile gases under the cap within Area 1. This was an appropriate interim measure for managing risks associated with volatile gases in the area but is not intended as a final solution for future development.

As stipulated in Requirement 14.2.1 of the CSMP, future development at the site be designed and carried out so that:

- Gas management system must be installed for any building structure in which people may work or gas may accumulate.

- No building basements or other accessible voids below the final cap surface level.
- No penetrations into buildings that could act as pathways for gas mitigation.
- Venting (existing or new) to be installed and maintained in areas not covered by structures.
- Venting Volatile Organic Compounds (VOCs) must not present a hazard to this or adjoining parts of the site.
- Either the existing vents are kept/left and maintained in their current location or in an alternative location that manages the risks associated with the presence of VOC or alternative methods for the management of risks associated with VOCs are utilised.
- Excavations are no deeper than 1.5 metres below the Area 1 finished cap level.
- For any part of the site the method location and extent of management or of venting of VOCs does not limit or adversely affect the development of adjoining part of the site.

3.12 Socio-economic

3.12.1 General

Submission Numbers

6, 15, 22, 24, 26, 27, 30, 43, 44, 80, 82, 89, 93, 94, 96, 97, 100, 107, 108, 111, 112, 113, 114, 117, 118, 119, 120, 121, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176

Summary of Issues

The following issues were raised by respondents:

a) The socioeconomic section of the EA only discusses economic impacts and does not discuss local social impacts. The EA does not appear to give adequate weighting to the amenity impacts, the liveability and sustainability of surrounding residential areas and does not propose compensatory offsets for these impacts. Suggestion that NPC commits to improving areas through measures such as street beautification programs, playground equipment for local parks, and improvements to local schools, where there are likely to be amenity impacts.

b) Suggestion that there is an opportunity to return some of the waterfront land to the public. The alienation of this land provides a disservice to the Mayfield community.

c) There is potential for a decline in local retail businesses as customers from outside Mayfield would be less likely to travel to the area.

d) There is merit in development of the BHP site as it is important for the economy and employment. The relative isolation of the site allows considerable activity to be undertaken and considerable economic scope as a result.

Response

a) As assessed in Section 9.10.2 of the EA, the overall impact of the proposed concept on the social and economic characteristics of the area is considered to be positive resulting in employment generation and supporting the economic growth of NSW. The proposed concept would enhance the social amenity of the surrounding area by transforming the highly disturbed site into that of a modern, state-of-the-art facility with a visual appearance in keeping with the existing port-related industrial activities conducted in the Port.

   Provided suitable mitigation measures are implemented, it is not anticipated that the proposed concept would have significant adverse impacts on the amenity of the area. There is no direct nexus between the proposed concept and the suggestions for measures such as street beautification programs, playground equipment for local parks, and improvements to local schools.

b) The public has not had access to the waterfront land at the site since industrial use of the site commenced many years ago. From 1866 to 1893 the site was used for copper smelting. Between 1915 and 1999 the site was used by BHP for iron and steelmaking. In 1999, iron and steel making operations at the Closure Area ceased and preparation of an EIS for demolition of the Steelworks, remediation of the Closure Area and development of a multi-purpose terminal commenced.

   NPC is now seeking to ensure the site is developed in accordance with the *NSW Ports Growth Plan*. One of the core directions of the *NSW Ports Growth Plan* is for the entire former BHP Steelworks site, including the

site of the proposed concept, to be secured for port use. Providing public access to waterfront land at the site would not be feasible and nor would it be consistent with the safety and security requirements of an operational port facility.

c) An increased workforce during both construction (average full-time workforce of approximately 60 workers and maximum of 160 workers given the staged development of the proposed concept) and operation (total workforce of approximately 300 personnel over three shifts by 2034) of the proposed concept is anticipated to support local retail business and Lower Hunter Region and through indirect benefits such as expenditure on local goods and services, fuel, infrastructure and other supplies which would be beneficial to a range of industries (refer to Section 9.10.2 of the EA).

d) The comment on the positive socio-economic benefits of the proposed concept is noted and supported.

3.12.2 Tourism

Submission Numbers

20

Summary of Issue

The following issue was raised by respondents:

a) Public access to the site should be provided in order to allow the important tourism industry to function.

Response

a) The NPC website **http://www.newportcorp.com.au** outlines all the dedicated public access and amenity sites around the Port of Newcastle. Sites at the Port of Newcastle facilitating the tourism industry include:

- The entire south-eastern side of the port is accessible to the public, with restaurants, cafes, BBQ's and viewing areas.
- The suburb of Stockton is a short ferry ride from the centre of Newcastle, and has parklands and picnic areas.
- The Queens Wharf complex includes an observation tower, along with restaurants and a hotel.
- The northern and southern breakwaters are popular walking areas, with the historic "Shipwreck Walk" on the northern breakwater (in Stockton) and viewing platforms and sculptures on the southern breakwater.
- There is a dog-friendly beach, called "Horseshoe Beach" not far from the southern breakwater.
- Places have been set aside for fishing in Carrington.

Given the range of public amenity areas around the Port of Newcastle, and the statutory and strategic justification for a purpose built port facility at the site of the proposed concept, it is not feasible or deemed necessary to provide public access at the site in order to accommodate tourism.

NPC is now seeking to ensure the site is developed in accordance with the *NSW Ports Growth Plan*. One of the core directions of the *NSW Ports Growth Plan* is for the entire former BHP Steelworks site, including the site of the proposed concept, to be secured for port use. Providing public access to waterfront land at the site would not be feasible and nor would it be consistent with the safety and security requirements of an operational port facility.

3.12.3 Property Values

Submission Numbers

30, 89

Summary of Issue

The following issue was raised by respondents:

a) Concern that house values will drop given the increased number of trucks in the region and increased noise levels. The EA fails to identify the social issue of decreased property values and does not discuss how much homes are likely to be de-valued. A decrease in house sales may also affect real estate businesses.

Response

a) From the 1880's Mayfield grew as a residential area which bordered the industrial areas of Newcastle. The proposed concept site has a long history of industrial use and the proposed concept remains in-line with this land-use.

From 1866 to 1893 the site was used for copper smelting. Between 1915 and 1999 the site was used by BHP for iron and steelmaking. In 1999, iron and steel making operations at the Closure Area ceased and preparation of an Environmental Impact Statement for demolition of the Steelworks, remediation of the Closure Area and development of a multi-purpose terminal commenced. The proposed concept is in-line with the historical industrial land-use at and around the site.

Although it is not appropriate for an Environmental Assessment to assess the potential for, or validity of impacts on real estate values, the EA does assess a range of potential amenity impacts such as noise, traffic, visual impacts etc, and considers that the impacts are not significant and are able to be mitigated to acceptable levels.

3.13 Visual

3.13.1 Aesthetic and Amenity

Submission Numbers

31, 81, 82

Summary of Issues

The following issues were raised by respondents:

a) Concern regarding the lack of assessment of lighting impacts on neighbouring properties.

b) Concern regarding the impact of the proposed concept on the visual amenity of Newcastle.

Response

a) Section 9.11.3 of the EA assessed lighting impacts from the proposed concept. The EA stated that there would be visual impacts associated with construction lighting and lighting to facilitate night time operations. The EA also stated that it is typical for port facilities to be illuminated at night and existing land uses at the Port are currently illuminated at night.

Project applicants would be required to prepare Lighting and Material Finishes Plans, incorporating appropriate mitigation measures to minimise lighting impacts such as:

- Lighting used for evening and night time construction work to be projected downward and toward the work area to minimise light spill into the surrounding areas.
- Lighting used for operational areas to be carefully selected to minimise light spill on surrounding areas outside the site boundaries to minimise visual impact when viewed from adjacent properties.

Lighting and Material Finishes Plans would take into consideration the buffering capacity of developments, such as the IIP, which sit between the proposed concept site and the nearest residential areas in Mayfield.

b) A visual assessment was carried out based on the visibility of the proposed concept and the capacity of the existing landscape to absorb the proposed concept. The findings of the assessment are presented in Section 9.11 of the EA.

The proposed concept would transform the site from a relatively vacant parcel of land with exposed earth and asphalt and little vegetation into a state-of-the-art facility with a visual appearance in keeping with the existing port-related industrial activities conducted in the Port. Activity and infrastructure associated with the operation of the facilities, berths and rail and road infrastructure would have low to moderate visual impacts on the landscape. The main visual impacts would result from increased port infrastructure such as cranes, elevated conveyors, storage silos, forklifts and gantry cranes, and from increased shipping and rail movements into and out of the area and impacts from lighting to facilitate night time operations.

Whilst the proposed concept would alter the existing visual landscape of the site, proposed new features, although significant, are typical of the local and wider landscape character as an industrial port area and are consistent with the past industrial use of the site. In this regard, the proposed concept is not expected to have an adverse effect on the visual amenity of the area.

3.14 Ecology

3.14.1 General

Submission Numbers

89

Summary of Issue

The following issue was raised by respondents:

a) Concern that traffic associated with the proposed concept would impact native wildlife.

Response

a) The ecological assessment in Section 9.12.3 of the EA considered favourable habitat of listed threatened species within 10 kilometres of the site. No favourable habitat was found to occur at the site due to the site's highly disturbed nature. Given the existing cleared and highly disturbed nature of the site (and that of the surrounding area), the fact that traffic associated with the proposed concept would utilise existing arterial road networks which are located in established urban areas, it is not anticipated that traffic associated with the proposed concept would have an adverse impact on native wildlife.

   As per submission 63, DECCW itself acknowledges that the proposed concept is unlikely to have a significant impact on threatened species.

3.15 Cumulative Impacts

3.15.1 Cumulative Impacts

Submission Numbers

1a, 7, 11, 14, 20, 23, 27, 30, 62, 92, 114, 177

Summary of Issues

The following issues were raised by respondents:

a) Concern that a proper assessment of the proposed concept is difficult without further understanding of the cumulative impacts from the site and the IIP. The EA should include likely cumulative impacts and the timing of these impacts associated with the proposed concept and the IIP. These two projects should be designed, considered and assessed together and not as ad-hoc projects.

   Specifically, concerns relating to cumulative impacts associated with the development of the IIP and the proposed concept include:

   - Concerns that there has been a lack of allowance for the cumulative impact of the potential traffic generation relating to the development of the IIP land within the traffic modelling for the NPC site.
   - There is a lack of assessment on the impact of traffic on the IIP road network, including the impact of level crossing queues.
   - No allowance has been made for train movements to and from the proposed IIP Intermodal facility.
   - Significant noise impacts are already predicted for the proposed concept, therefore significant cumulative impacts seem inevitable when considering the IIP development, especially as the IIP is located closer to residential development.

b) All growth areas, regional projects, and other port related expansions which may occur concurrently need to be taken into account when assessing cumulative impacts.

c) Concern that future activities on the site may constrain the operation of OneSteel. NPC must be required to consult with OneSteel in relation to any cumulative impacts which may affect OneSteel's current and proposed operations. NPC must be required to mitigate any potentially adverse impacts which may affect surrounding industrial activity.

d) The noise assessment and current noise modelling does not appear to address the development and future land use on the IIP site. No noise receivers were modelled within the IIP site.

e) The cumulative impact associated with the PWCS Port Masterplan, including the development of up to seven new shipping berths along the Hunter River South Arm has not been adequately assessed.

Response

a) A cumulative assessment of the traffic impacts associated with the proposed concept and IIP traffic is presented in Section 6 of the revised Transport Assessment. The cumulative assessment demonstrates that the intersections of Industrial Drive/Ingall Street and Industrial Drive/George Street are both unable to operate at an acceptable level of service. Mitigation measures are recommended in relation to noise, refer to the response provided to the issued raised in **Section 3.15.1 (e)** of this Submissions Report.

b) As discussed in Section 9.14 of the EA, due to the long timeframe of the proposed concept and uncertainty as to future projects which may be approved, it is not possible at this stage to assess in detail the potential cumulative impacts that may occur in later years of the proposed concept. Project applicants would conduct detailed, more quantitative assessments of cumulative impacts as part of separate Project applications based on existing conditions and known proposals at that time.

   It is recommended that Project applicants liaise with Newcastle City Council, the DoP, proponents of other projects and land holders to determine the timing and location of developments that may coincide with the individual projects within the site. Specific mitigation measures for cumulative impacts would be determined following this consultation and an assessment of cumulative impacts.

c) OneSteel's operations are part of the existing industrial environment of the Port of Newcastle. Therefore, cumulative impacts of the proposed concept with OneSteel's existing operations have been assessed as part of baseline conditions in undertaking the environmental assessment for the proposed concept. The cumulative impacts associated with OneSteel's existing operations has been undertaken quantitatively in the air quality, noise, and traffic assessments. Cumulative traffic impacts associated with the existing OneSteel operations, the proposed concept and the future IIP are addressed in the response to the issue in **Section 3.15.1 (a)** of this Submissions Report.

   NPC has not been made aware of any proposals or plans by OneSteel for its future operations. As stated in Section 9.14.1 of the EA, detailed assessment of cumulative impacts associated with future proposals would be undertaken as part of separate Project applications based on existing conditions and known proposals at that time. Therefore, the cumulative impact assessment in the EA focuses on the cumulative impacts of the proposed concept in the context of projects recently approved or those that are currently or soon likely to be seeking approval for development.

d) Cumulative noise impacts associated with the future IIP were not modelled because of the lack of detail regarding future activities at the IIP. Rather, the EA included a qualitative assessment of the likely cumulative impacts in Section 9.14.2. The EA stated that there is potential for cumulative noise impacts associated with the IIP depending on the type of industrial activities conducted in the general industry precinct, the nature of the activities conducted in the intermodal and port support zone, the hours of operation, the layout of the site etc. It is likely that construction of the proposed concept and the IIP would overlap at some time. Therefore, there is potential for cumulative impacts to occur as a result of noise generated during construction.

   The EA also stated that while noise generated by the IIP has the potential to generate noise which could result in cumulative impacts with noise from other industrial land uses in the area and with operations at the site, the likely shielding by the IIP buildings, the type of activities conducted at the IIP, and the hours of operation of the IIP would all be variables that are likely to influence the cumulative noise impacts.

   Noise receivers were not modelled for the IIP site because there are not currently any sensitive noise receivers (i.e. residences, hospitals, nursing homes etc) located within the IIP site.

e) NPC's primary role is to coordinate, manage and plan for the current and future growth of trade in the Port. NPC has identified that the development of the berths at the site of the proposed concept will require its integration with all other port users and facilities. The action NPC has taken to integrate existing shipping with future growth has been to:

   - Become a member of the Hunter Valley Coal Chain Coordinator – Capacity Management Committee which plans for the future growth of coal trade.
   - Develop a Port Traffic Simulation Model to determine current and future shipping traffic in the Port and identify the resources required to manage shipping demands for both coal and non-coal facilities.
   - Formulate its strategic business plan incorporating the actions identified from growth modelling to grow and diversify trade, deliver opportunity for the Hunter Region and provide a sustainable Port.

3.16 Sustainability

3.16.1 Greenhouse Gas Inventory

Submission Numbers

62, 63, 116

Summary of Issue

The following issue was raised by respondents:

a) A detailed assessment of greenhouse gas emissions and energy use has not been provided. No specific conditions of approval relating to greenhouse gas emissions are recommended in the EA.

Response

a) Due to the detailed nature of information required to conduct a thorough greenhouse gas emissions inventory and the level of information available at the Concept Plan stage, an inventory has not been prepared as part of this EA. As detailed in Section 10.1 of the EA, individual operators would be required to conduct greenhouse gas emission inventories as part of future Project applications and to implement sustainability strategies which focus on energy conservation and reduction of greenhouse gas emissions. In its submission DECCW supported this approach in relation to the timing of the greenhouse gas assessments.

   Project applicants would be required to incorporate sustainability strategies into the design of individual facilities. At a minimum, sustainability strategies would be required to address:

   - Use of renewable energy and energy conservation.
   - Waste reduction, reuse, and recycling.
   - Water conservation.
   - Monitoring performance and identifying areas for improvement.

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4.0 Final Statement of Commitments

This section contains the final SoC and also details the environmental performance objectives, criteria, and management strategy set for the proposed concept.

4.1 Introduction

4.1.1 Statement of Commitments

In accordance with the EA requirements under Part 3A of the EP&A Act, a draft SoC was included in the EA which identified NPC's environmental mitigation, management and monitoring commitments for the proposed concept. After consideration of the issues raised during the public exhibition period, the draft SoCs has been revised. The revised SoC adheres to the same format of the draft SoC, with revisions or additional commitments detailed in bold and italicised, and deleted commitments struck out, for ease of reference.

The preparation and implementation of environmental mitigation and management measures for the proposed concept holds great significance in ensuring that potential environmental impacts are minimised.

The revised SoC addresses construction and operation of the proposed concept and has been compiled on an issues basis. It has been informed by the environmental impact assessment undertaken as part of the EA and the submissions received on the EA.

Project applicants would prepare separate SoC's as part of their EAs. The SoC should be generally consistent with these SoC's and reflect the more detailed project information that is available.

4.2 General

NPC would ensure that Project applicants meet the following general performance requirements:

- Prepare Project applications in a manner which is generally consistent with the key assumptions and recommendations contained in this Concept Plan and EA.
- Develop and operate individual facilities in a manner which is generally consistent with the Concept Plan and this EA.
- Develop and operate individual facilities in compliance with the mitigation and management measures contained in this SoC ~~, where applicable~~ ***unless Project applicants can demonstrate that alternative mitigation and management measures can achieve an equivalent or improved environmental outcome***.

NPC would be responsible for preparing a CEMP and OEMP for the NPC operations precinct and other common areas of the site that are not leased out by individual operators. Project applicants would be responsible for preparing CEMPs and OEMPs for individual projects. The CEMPs and OEMPs would include the sub-plans described in **Sections 4.3** through **4.16**, of this Submissions Report as appropriate.

4.3 Road Transport

4.3.1 Objective

NPC has the following objective in relation to road transportation:

> **To maintain an acceptable level of performance of existing intersections and roadways in the vicinity of the site, *preclude the use of existing residential road network by heavy vehicles* and encourage modal split towards rail.**

The objective for road transportation would be achieved by ensuring Project Applications meet the environmental performance criteria presented below.

4.3.2 Environmental Performance Criteria

Project Applications would be required to comply with the following environmental performance criteria. Overall site and precinct-specific criteria have been developed for road transportation.

Overall Site Criteria

Project Applications would be required to comply with the following environmental performance criteria. Overall site criteria have been developed for road traffic and transportation where it intersects with the external road network.

Heavy vehicle movements generated by the Concept Plan will be required to use a designated truck haulage route using the arterial road network and preventing heavy vehicle movements entering the existing residential road network.

The site as a whole would be required to comply with the intersection performance criteria detailed in **Table 4-1**. These correspond with those set out in the RTA *Guide to Traffic Generating Developments* (2002) and take into account background traffic volumes generated by other activities in the area.

Table 4-1 Peak Hour Intersection Performance Criteria

Intersection	Level of Service	Average Delay (seconds per vehicle)
Industrial Drive/George Street Intersection	D	43 to 56
Industrial Drive/Ingall Street Intersection	D	43 to 56

Additional overall site criteria are as follows:

- Operation of the site should not cause vehicles to queue so as to interfere with the movement of through traffic, operation of intersections, and access to adjoining properties.
- The total predicted volume of traffic generated by the proposed concept is within the mid-block lane capacity of the existing ~~***and proposed local industrial***~~ road network ~~***on the north east side of Industrial Drive.***~~.
- The types of vehicles accessing the site must be able to be safely accommodated within the road geometry.
- ***Operation of the site will not facilitate, require or otherwise rely on heavy vehicle traffic using the existing residential road network.***
- ***Operation of the site will require the proponent to develop, implement and manage measures that preclude the use of the existing residential road network, particularly via George Street and Ingall Street intersections with Industrial Drive.***
- ***Future Project Applications will initiate consultations with the relevant local and state government agencies to ensure current and future planning needs are satisfied as they relate to traffic flows on the local road network.***
- ***Development of the site including the road network will be consistent with relevant local government standards relating to road construction.***

Precinct Criteria

In order to comply with the overall site criteria, operators within the individual precincts would be required to generally comply with the truck and vehicle movements presented in **Table 4-2.**

Table 4-2 Truck and Employee Vehicle Movement Criteria

Precinct	Truck Movements Per Daytime Peak Hour	Employee Vehicle Movements Per Daytime Peak Hour
Bulk and General	24	N/A
General Purpose	16	N/A
Container Terminal	~~165~~ 183	N/A
Bulk Liquid	9	N/A
Total	~~214~~ 232	90

4.3.3 Environmental and Performance Management

Based on the current intersection operations and the potential trip distribution from the precincts, there is potential for the Industrial Drive/Ingall Street intersection to exceed the criteria. Therefore, traffic from the Container Terminal Precinct and employee traffic would likely need to be distributed to the Industrial Drive/George Street intersection in order to ensure the criteria is met. An internal link road connecting all precincts would allow this

distribution of trips, and a TMP should be established to allow management of the traffic between the intersections.

NPC will ensure that an appropriate internal link road is provided in a timely manner during development of the Concept Plan so as to ensure that peak hour performance at the Industrial Drive/George Street and Industrial Drive/Ingall Street intersections are maintained at a Level of Service (LoS) D or better. The design for this link road in terms of alignment, number/width of lanes and overall capacity will be determined in consultation with relevant local and state government agencies and adjacent land owners.

NPC will endeavour to improve the modal split of transport by rail over the timeframe of the Concept Plan by developing and upgrading rail infrastructure within the site and subject to the timely implementation of the NSFC project.

Other mitigation options ***including, but not limited to, those options identified in the revised Transport Assessment prepared by AECOM and dated December 2010*** will ~~should~~ also be considered for managing traffic should there be potential for the intersection performance criteria to be exceeded.

To ensure the site functions in accordance with the environmental performance criteria, NPC would:

- Establish a TMP for the entire site in consultation with relevant stakeholders, and ensure that Project applicants adhere to the TMP. The TMP would:
    - Set out the environmental performance criteria for the site and individual facility;
    - Identify the access points between the site and the local road network (Selwyn Street and Ingall Street), and the use of these access points by operators within the precincts;
    - Identify access points for neighbouring properties;
    - Detail appropriate traffic mitigation and management measures, one of the most important being the need for distributing traffic between the Industrial Drive/Ingall Street and Industrial Drive/George Street intersections. Mitigation and management measures that address queuing associated with the railway crossings, maintaining access to neighbouring properties, and maintaining and/or upgrading the road pavement condition and/or road geometry should also be included;
    - Detail an appropriate traffic and road condition monitoring program including the frequency of the monitoring, the duration of the monitoring program, the protocol for making the traffic and roadway condition observations etc;
    - Specify the reporting procedures;
    - Define corrective action and contingency measures in the event that the relevant environmental performance criteria are likely to be exceeded; and
    - Include a process for regularly reviewing and updating the TMP.
- Conduct periodic assessments of operation of the internal and external intersections and roadways.
- Periodically review the trip generation and distribution to reflect actual site conditions, taking into account any cumulative traffic impacts associated with the future IIP. This would be of particular importance where a precinct generates traffic levels below those documented because it may allow other precincts to generate higher traffic levels while still complying with the overall site criteria.
- ***Monitor for intersection performance and queue lengths at regular intervals to determine what improvements may be required and the timing for implementation.***

Given the potential for cumulative traffic impacts with the future IIP (~~refer to **Section 9.14**~~), NPC commits to managing traffic from the proposed concept in close cooperation with Buildev Intertrade Consortium who have been selected as the preferred developer to develop the IIP.

Workplace Travel Plans ***will be prepared*** ~~should be considered~~ at the Project application stage for the individual facilities when these are made by the prospective operators of the facilities, with attention given to promoting access by walking, cycling and public transport. This would reduce the impact made by employee traffic.

Project applicants will be responsible for preparing individual TMPs, consistent with the TMP for the overall site.

4.4 Rail Transport

4.4.1 Objective

NPC has the following objective in relation to rail transportation:

> **To ensure rail operations have minimal impact on other rail activities within Morandoo Yard, Port Waratah Loop and Bullock Island Loop, and that rail cargo volumes are maximised within the constraints of the rail network that exist at a particular point in time.**

The objective for rail transportation would be achieved by ensuring Project applications meet the environmental performance criteria presented below.

4.4.2 Environmental Performance Criteria for the Site

Project applications would be required to comply with the environmental performance criteria developed for the overall site. The overall site criteria are as follows:

- The Bullock Island Loop arrival roads and coal arrival roads to Port Waratah coal unloaders need to be kept clear. Trains should not prevent access into these arrival roads, excluding normal access to the Port Waratah and Bullock Island Loops;
- Trains should only stable in the dedicated rail sidings to be provided within the proposed concept site. ***If trains need to be held while waiting for entry into the port site then they*** ~~trains~~ should be broken up to stable within the sidings in the Morandoo Yard;
- ***NPC will actively consult with Transport NSW, ARTC and RailCorp in relation to the scope, staging and timing for the NSFC project so that, as far as is practicable, there is reasonable alignment with the timeframe for development of the Concept Plan;***
- ***The upgrading of rail infrastructure within the site will be required to improve the efficiency of rail operations over the timeframe of the Concept Plan. Such upgrades could include the development of additional and/or longer rail sidings and the introduction of gantries for loading/unloading;***
- ***To improve the efficiency of port operations grade separation of the rail crossings may be required. Monitor traffic levels, queuing and intersection performance at regular intervals to determine when grade separation may be required;***
- ***Where appropriate, having regard to the scope and potential impacts of the project, an ALCAM assessment of the rail crossings serving the port land will be undertaken during the Project application stage;***
- A future rail exit road from the site to the Bullock Island Loop would need to be constructed when the number of required trains exceeds two per day;
- The number of trains accessing the site should not exceed four per day without conducting a further assessment of the capacity of the rail network and infrastructure within and adjacent to the site and the capacity of the wider rail network;
- Train movement and shunting within Morandoo Yard must be agreed and coordinated with the Terminal Operation Coordinator and the Signaller at Port Waratah Loop; and
- Any modifications to the Morandoo Yard need to be prepared in consultation with and approved by ATRC (or owner at the time).

4.4.3 Environmental and Performance Management

To ensure the site functions in accordance with the environmental performance criteria NPC would:

- Establish a Train Operations Plan for proposed movements within the Morandoo Yard and the site, and ensure that Project applicants adhere to the plan. This plan would be developed in consultation with other rail operators, the Terminal Operation Coordinator and the Signaller at Port Waratah Loop. The Train Operations Plan would include the following:
  - Train scheduling, including the arrival and departure of trains to and from the site;
  - Train loading and unloading procedures, with emphasis on maximising the transportation of cargo by rail but within the constraints of the rail network and infrastructure;

- Procedures for use of the sidings within the site, including shunt manoeuvres to split the trains and enter the sidings and for reforming the train prior to departure from the sidings whilst minimising impact on railway crossings and OneSteel;
- Procedures relating to train movement and shunting within the Morandoo Yard;
- Procedures for crossing the Selwyn Street and new western road (needed to service the Bulk Liquid and Container Terminal Precincts) railway crossings; and
- Procedures for accessing the Port Waratah Loop and Bullock Island Loop.

- Require Project applicants to conduct operational assessments of any impacts on the existing Morandoo Yard, Port Waratah Loop and Bullock Island Loop, including any impacts on roadway level crossings, and provide the results to NPC.
- Periodically review the rail operations and Train Operations Plan to reflect actual site conditions and operations in the Morandoo Yard, Port Waratah Loop and Bullock Island Loop.

4.5 Noise

4.5.1 Objective

NPC has the following objective in relation to noise:

To ensure noise generated by operations at the site, and from road and rail traffic travelling to and from the site, does not have an adverse impact on surrounding residential receivers.

The objective for noise would be achieved by ensuring Project applications meet the environmental performance criteria presented below.

4.5.2 Environmental Performance Criteria for the Site

Project applications would be required to comply with the following environmental performance criteria. Overall site and precinct-specific criteria have been developed for noise.

Overall Site Criteria

The site as a whole would be required to comply with the industrial noise criteria detailed in **Table 4-3**, ***which has been revised from the EA as a result of the comment that Stockton ought to be classified as "suburban" and Carrington ought to be classified as "urban".*** ~~and~~ The sleep disturbance criteria detailed in **Table 4-4** ***remains unchanged from the EA***. The criteria take into account background noise levels generated by other activities in the area.

Table 4-3 Revised Project-Specific Noise Criteria at Residences

Location	*Area*	*Intrusiveness $L_{Aeq,15min}$ (dBA)*			*Amenity $L_{Aeq,period}$ (dBA)*		
		Day	*Eve*	*Night*	*Day*	*Eve*	*Night*
A - 1 Arthur Street, Mayfield	***Urban***	***51***	***52***	***51***	***60***	***49***	***43***
B - 2 Crebert St, Mayfield	***Urban***	***54***	***47***	***45***	***60***	***50***	***43***
C -32 Elizabeth Street, Carrington	***Urban***	***49***	***48***	***44***	***57***	***44***	***45***
D -Stockton	***Suburban***	***46***	***46***	***46***	***55***	***37***	***37***

~~Table 4-4: Project-Specific Noise Criteria at Residences~~

~~Location~~	~~Area~~	~~Intrusiveness $L_{Aeq,15min}$ dBA~~			~~Amenity $L_{Aeq,period}$ dBA~~		
		~~Day~~	~~Evening~~	~~Night~~	~~Day~~	~~Evening~~	~~Night~~
~~1 Arthur Street, Mayfield~~	~~Urban~~	~~51~~	~~52~~	~~51~~	~~60~~	~~49~~	~~43~~
~~2 Crebert Street, Mayfield~~	~~Urban~~	~~54~~	~~47~~	~~45~~	~~60~~	~~50~~	~~43~~
~~32 Elizabeth Street, Carrington~~	~~Urban~~	~~49~~	~~48~~	~~44~~	~~65~~	~~49~~	~~50~~
~~Stockton~~	~~Urban~~	~~46~~	~~48~~	~~48~~	~~60~~	~~47~~	~~37~~

Table 4-4 Sleep Disturbance Noise Criteria

Location	Rating Background Level	Sleep Disturbance Screening Criterion, $L_{A1,1minute}$ dBA
A - 1 Arthur Street, Mayfield	46	61
B - 2 Crebert Street, Mayfield	40	55
C - 32 Elizabeth Street, Carrington	39	54
D - Stockton	43	58

Traffic generated by the proposed concept would be required to comply with the *Environmental Criteria for Road Traffic Noise* (ECRTN) which states that where the criteria are already exceeded (as is the case at some locations along Industrial Drive) traffic arising from the proposed concept should not lead to an increase in existing noise levels of more than 2 dBA at residences. Mitigation would be required if there is an exceedance of more than 2 dBA.

Precinct Criteria

In order to comply with the overall site criteria, operators within the main noise-generating precincts (other than the NPC Operations Precinct) would be required to comply with the sound power levels presented in **Table 4-5**.

Table 4-5 Precinct Noise Criteria – Sound Power Levels

Precinct	Sound Power Level (dBA) – Total for Precinct
Bulk and General Purpose Precinct	119
General Purpose Precinct	116
Container Terminal Precinct	117
Bulk Liquid Precinct	114

Note: The sound power levels were developed based on the results of the noise modeling. Indicative equipment and operation scenarios for each precinct were entered into the noise model and project noise levels were generated. The sound power levels presented in this table are the sum of the sound power levels of the individual equipment within each precinct. Sound power level criteria were not presented for the NPC Operations Precinct because the precinct is not acoustically significant to surrounding receivers (taking into account the activities conducted within the precinct and the location of the precinct relative to residential receivers).

If Project Applications present noise levels above the precinct criteria stated in **Table 4-5**, noise control measures should be incorporated at these noise sources to reduce the sound power level. The projects would be assessed to ensure the overall site criteria would be met and that there would be an acceptable noise outcome at surrounding residential receivers.

Project applicants would be required to input the sound power levels (and the noise control measures if applicable) from the proposed project into an overall site noise model developed for NPC and determine whether the cumulative noise contribution at surrounding residential receivers is in compliance with the overall site criteria.

4.5.3 Environmental and Performance Management

To ensure the site functions in accordance with the environmental performance criteria NPC would:

- Require Project applicants to prepare Noise Management Plans addressing operation of individual facilities at the site. The noise assessment undertaken during preparation of the EA has shown that predicted noise levels from operations at the site during the night time would exceed the noise criteria at nearby residences ***(Crebert Street and Arthur Street, Mayfield and at Stockton)*** unless noise mitigation measures are adopted. Night time traffic noise levels at residences along Industrial Drive would also exceed the traffic

noise criteria and require mitigation. Therefore, the key focus of the Noise Management Plans should be on minimising night time operational and traffic noise emissions. The Noise Management Plans should:

- Set out the regulatory guidelines and conditions of consent relevant to noise;
- Assign responsibilities and communication requirements;
- Identify the objectives and environmental performance criteria for noise management at the site;
- Identify the operational noise sources;
- Detail appropriate noise mitigation and management measures, such as those included in Section 9.3.4 of the EA, including the timing and extent of mitigation required (particularly relevant for traffic noise impacts to residences along Industrial Drive during the night time ***and the installation of signs at the entrance of the site requesting drivers not to use compression engine brakes***);
- Detail an appropriate noise monitoring program. For example, the noise monitoring program should identify the noise monitoring locations, the equipment used to measure noise, the frequency of the monitoring, the duration of the monitoring program, the protocol for taking the noise measurements, and the equipment calibration methodology and schedule;
- Specify the reporting procedures;
- Define corrective action and contingency measures in the event of exceedances of the relevant environmental performance criteria;
- Include protocols for evaluating performance i.e. inspection checklists, maintenance records, reporting and assessment of monitoring results; and
- Include a process for regularly reviewing and updating the Plan to identify continual improvement or modifications to procedures.

- Require Project applicants to conduct periodic compliance noise measurements once facilities are operational and provide the results to NPC.
- Update the overall site noise model to reflect compliance noise measurements from individual facilities and maintain the noise model for the site as a whole or cumulatively.
- Periodically review the precinct criteria ***(sound power levels)*** presented in **Table 4-5** to reflect actual site conditions. This would be of particular importance where a precinct generates noise levels either below or above those documented in the table because it may allow other precincts to generate higher or lower noise levels while still complying with the overall site criteria.
- Establish a noise complaint 'hotline' and distribute information on the hotline and noise complaint process to the local community.

Due to lack of available information on construction practices and equipment, construction noise was not analysed in the EA but ought to be addressed at the Project application stage. Noise Management Plans should ***also*** be prepared by Project applicants to address construction noise.

4.6 Air Quality

4.6.1 Objective

NPC has the following objective in relation to air quality:

To ensure air pollutants emitted from the site, *and in particular PM_{10}*, do not have an adverse impact on surrounding residential receivers.

The objective for air quality would be achieved by ensuring Project applications meet the environmental performance criteria presented below.

4.6.2 Environmental Performance Criteria for the Site

Project applications would be required to comply with the environmental performance criteria developed for the overall site. The overall site criteria are listed for each pollutant of concern in **Table 4-6**.

Table 4-6 Air Quality Criteria at the Site and Surrounding Residential Areas

Pollutant	Averaging period	Concentration		Source
		pphm	$\mu g/m^3$	
SO_2	10 minutes	25	712	NHMRC (1996)
	1 hour	20	570	NEPC (1998)
	24 hours	8	228	NEPC (1998)
	Annual	2	60	NEPC (1998)
NO_2	1 hour	12	246	NEPC (1998)
	Annual	3	62	NEPC (1998)
O_3	1 hour	10	214	NEPC (1998)
	4 hours	8	171	NEPC (1998)
Pb	Annual	-	0.5	NEPC (1998)
PM_{10}	24 hours	-	50	NEPC (1998)
	Annual	-	30	EPA (1998)
TSP	Annual	-	90	NHMRC (1996)
H_2S	Nose-response time[4]	-	1.38 [5]	AWT (2001)
		g/m^2.month	g/m^2.month	
Deposited dust	Annual	2[1]	4[1]	NERDDC (1988)
		ppm	mg/m^3	
CO	15 minutes	87	100	WHO (2000)
	1 hour	25	30	WHO (2000)
	8 hours	9	10	NERDDC (1998)
Benzene	1 hour	0.04	0.19	EPA VIC (2001)
Toluene	1 hour	0.09	0.36	EPA VIC (2001)
Ethyl Benzene	1 hour	1.8	8	EPA VIC (2001)
Xylenes	1 hour	0.04	0.19	EPA VIC (2001)
		$\mu g/m^3$[2]	$\mu g/m^3$[3]	
HF	90 days	0.5	0.25	ANZECC (1990)
	30 days	0.84	0.4	ANZECC (1990)
	7 days	1.7	0.8	ANZECC (1990)
	24 hours	2.9	1.5	ANZECC (1990)

pphm – Parts Per Hundred Million
ppm – Parts Per Million
[1] Deposited dust criteria allow for a maximum increase of 2 g/m^2.month with a total cumulative rate of 4 g/m^2.month.
[2] Fluoride criteria refer to non sensitive land use.
[3] Fluoride criteria refer to sensitive land use e.g. grapes, stone fruit etc.
[4] Nose response time average is assessed using the 99th percentile (DEC, 2005).
[5] Hydrogen sulfide criterion is based on an affected community population of greater than 2000 (DEC, 2005).

The NSW DECCW Approved Methods (DEC, 2005) ambient air quality criteria are applicable to all predicted sensitive receptor concentrations, independent of their source facility/precinct. In addition, impacts must take into consideration those pollutant contributions from all local and regional sources (cumulative assessment) i.e. internal and external to the site. As such, it was not considered appropriate to develop precinct-specific air quality criteria for the site.

4.6.3 Environmental and Performance Management

To ensure the site functions in accordance with the environmental performance criteria NPC would:

- Require Project applicants to prepare AQMPs addressing operation of individual facilities at the site. The air quality modelling undertaken during preparation of the EA has shown dust (in particular PM_{10}) to be a pollutant of concern from some operational activities associated with the proposed concept. Therefore, the key focus of the AQMPs should be on minimising and managing dust emissions. The AQMPs should:
  - Set out the regulatory guidelines and conditions of consent relevant to air quality;
  - Assign responsibilities and communication requirements;
  - Identify the objectives and environmental performance criteria for air quality at the site;
  - Identify the main potential dust sources and other sources of air quality impacts;
  - Detail appropriate air quality and dust mitigation and management measures, such as those detailed in Section 9.4.4 of the EA;

- Detail an appropriate air quality monitoring program. For example, the air quality monitoring program for dust should identify the dust fraction to be measured i.e., TSP, PM_{10}, $PM_{2.5}$ etc, the equipment used to measure the selected dust fraction, the frequency of the monitoring i.e., sample collection schedule, the duration of the monitoring program, the location of the monitoring station(s), the standards/guidelines that are to be followed for location/construction of the monitoring station, the protocol for collection of samples and analysis of samples, and the equipment calibration methodology and schedule. It should be noted that there could be opportunities for Project applicants to share monitoring stations;
- Specify the reporting procedures;
- Define corrective action and contingency measures in the event of exceedances of the relevant environmental performance criteria;
- Include protocols for evaluating performance i.e., inspection checklists, maintenance records, reporting and assessment of monitoring results; and
- Include a process for regularly reviewing and updating the AQMP to identify continual improvement or modifications to procedures.

- Require Project applicants to undertake periodic air quality and meteorological monitoring at the site to monitor for the primary pollutants of concern, in particular PM_{10}. This data would be used to establish a rolling data set that would be used to assess future site compliance with the above environmental performance criteria ***If monitoring results indicate that the criteria are exceeded and such exceedances are not attributable to elevated background levels, potential on-site dust sources would be investigated and identified by operators where possible. Where potential on-site dust sources are identified the necessary corrective action would be taken.*** ~~***as detailed in Section 11.6 of the EA.***~~ ***Where exceedances are due to elevated background levels corrective action would not be required by operators.*** ~~and to assess the capacity of the airshed in the future to absorb additional pollution~~.
- Require Project applicants to compile annual air quality monitoring data summaries to allow monitoring of long-term meteorological and pollutant concentration trends at the site and submit the results to NPC.
- Develop and maintain a dispersion model for the site as a whole that allows for a consistent future assessment approach for Project applicants at the site and allows air quality emissions to be managed for the site as a whole or cumulatively.
- Periodically review the criteria presented in **Table 4-6** with reference to Project applications and include additional criteria as necessary and consistent with DECCW's list of air pollutants of concern.

Due to a lack of available information on construction practices and equipment, potential air quality impacts associated with construction were not analysed quantitatively the EA. ~~Considering that background PM_{10} levels already exceed the DECCW criteria,~~ Dust emissions during construction should be addressed in detail at the Project application stage. Construction AQMPs should be prepared by Project applicants to address potential air quality impacts during construction.

4.7 Hazard and Risk

4.7.1 Objective

NPC has the following objective in relation to hazard and risk:

To ensure potentially hazardous areas within the site do not pose unacceptable risks to surrounding land uses and that the location of facilities within the site do not result in an accumulation of risk that would exceed the acceptable risk criteria.

The objective for hazard and risk would be achieved by ensuring Project applications meet the environmental performance criteria presented below.

4.7.2 Environmental Performance Criteria

Project applications would be required to comply with the following environmental performance criteria. Overall site and precinct-specific criteria have been developed for hazard and risk.

Overall Site Criteria

Potentially hazardous facilities/areas within the site would be required to be sited with appropriate separation distances (refer to Section 11.7.3 of the EA) and designed such that they do not cumulatively impact adjacent

surrounding industrial and residential land uses in a manner exceeding permissible impact levels published in *HIPAP No.4 Risk Criteria for Land Use Safety Planning*. Potentially hazardous facilities/areas are those used to store Dangerous Goods that are listed on the *Australian Dangerous Goods Code* and exceed the threshold levels listed in SEPP 33.

Precinct Criteria

Potentially hazardous facilities/areas within each precinct would be required to be sited with appropriate separation distances (refer to Section 11.7.3 of the EA) and designed such that they do not impact adjacent precincts in a manner exceeding permissible impact levels published in *HIPAP No.4 Risk Criteria for Land Use Safety Planning.* Potentially hazardous facilities/areas are those used to store Dangerous Goods that are listed on the *Australian Dangerous Goods Code* and exceed the threshold levels listed in SEPP 33*.*

4.7.3 Environmental and Performance Management

To ensure the site functions in accordance with the environmental performance criteria NPC would:

- Require Project applicants that are subject to SEPP 33 to prepare and operate under a Safety Management System that would control risks identified in the PHA conducted for the overall site; and
- Conduct a Hazard Audit of the site in accordance with the requirements of *HIPAP No.5, Hazard Audits* once every three years to demonstrate that the site Safety Management System is effectively controlling the identified hazards and risks.

In addition, and to ensure that the potential hazards and risks are maintained in the As Low As Reasonably Practicable (ALARP) Range, NPC would be responsible for:

- Updating NPC's existing Port Emergency Response Plan to include any additional response measures specific to the site.
- Responding to port-related emergencies at the site via NPC's Port Emergency Response Team.
- Providing spill retention equipment (i.e., spill kits, booms, etc.) for quick response and deployment.
- Training NPC personnel in emergency response procedures specific to the site.
- ***Ensuring construction of the underground fuel storage tanks in the NPC Operations Precinct would be constructed in accordance with the requirements of the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008, the Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008, and the CSMP.***

Project applicants would be responsible for conducting the following where applicable:

- Preparing a detailed PHA for each of the facilities proposed under subsequent Project applications to confirm the results of the PHA for the proposed concept and to ensure that the detailed site layouts and Dangerous Goods storage quantities and operations do not result in the acceptable risk criteria being exceeded.
- It was identified that methyl bromide would be used for fumigation of containers that may contain contamination (e.g. wildlife, insects, etc.). Methyl bromide is a Chlorofluorocarbon (CFC) gas and has a detrimental effect on the environment if released. The Bulk and General Precinct, General Purpose Precinct and Container Terminal Precinct would be designed and operated with methyl bromide dosing and capture systems to minimise the risk of harmful gas release to the atmosphere.
- Liquid Dangerous Goods could be held in transit storage at the site. Spill containment areas would be constructed at the site. The spill retention area for flammable liquids (Class 3), toxic liquids (Class 6), corrosive liquids (Class 8) and environmentally hazardous liquids (Class 9) would be constructed to retain a minimum of 20,000 litres. Based on the assumptions made in the EA, transit Dangerous Goods storage areas within the Container Terminal Precinct would not be located within 67 metres of the edge of the bunds in the Bulk Liquids Precinct. This separation distance would be confirmed at the Project application stage when design details are known.
- Any flammable solids storage area would be appropriately separated from other Dangerous Goods storages and the site/precinct boundary. Based on the assumptions made in the EA, a minimal separation distance of 14.4 metres would be required but this would be confirmed at the Project application stage when design details are known. It is also recommended that the assessment conducted in this study for the heat radiation impact from flammable liquids fires be reviewed during the detailed design of each subsequent Project application.

- Any flammable liquids storage area would be appropriately separated from other Dangerous Goods storages and the site/precinct boundary. Based on the assumptions made in the EA, a minimal separation distance of 30 metres would be required but this would be confirmed at the Project application stage when design details are known. It is also recommended that the assessment conducted in this study for the heat radiation impact from flammable liquids fires be reviewed during the detailed design of each subsequent Project application.
- In the event of a flammable gas release in a cylinder storage container within the Container Terminal Precinct, a gas ignition could result in explosion. The storage of flammable gases in cylinders would be appropriately separated from other Dangerous Goods storages and the site/precinct boundary. Based on the assumptions made in the EA, a minimal separation distance of 78 metres would be required but this would be confirmed at the Project application stage when design details are known.
- The underground storage tanks within the NPC Operations Precinct would be located greater than 16.1 metres from the site boundary and adjacent precincts.
- An Emergency Response Plan should be developed for each of the facilities at the site as part of subsequent Project applications and should be consistent with *HIPAP No.1, Emergency Planning Guidelines for Industry* (DoP, 2008).
- Detailed hazard analysis studies conducted for the facilities within the Bulk Liquids Precinct would include an assessment of risks to identify whether the buffer zones assessed in this concept analysis can be reduced by the introduction of terminal safety features (e.g. fire detection and protection systems, emergency response plans, etc.).
- Future operators would consider risk reduction measures for chlorine gas at the Project application stage.
- Future operators would provide fire hydrants, fire pumps that draw water from the South Arm of the Hunter River (unlimited water supply), fire hose reels in the buildings in each facility, and fire extinguishers in the buildings in each facility and on each vehicle used within the Port.

4.8 Water Management

4.8.1 Objective

NPC has the following objectives in relation to water management:

To minimise the impacts of stormwater runoff on property, infrastructure and the receiving environment.

To ensure flooding impacts within the site are minimised.

To minimise pollutants in runoff from the site and to contribute towards achieving the water quality objectives of the Hunter River.

The objectives for water management would be achieved by ensuring Project applications meet the environmental performance criteria presented below.

4.8.2 Environmental Performance Criteria

Project applications would be required to comply with the overall site environmental performance criteria provided below. At the concept stage, the overall site and precinct-specific criteria are the same, however, when more detail is available on the exact nature of the activities to be conducted within the precincts additional criteria may need to be developed and tailored specifically to the activities being carried out on-site.

Surface water management environmental performance criteria are as follows:

- Stormwater is to be managed on-site and stormwater infrastructure must comply with the overall SMS prepared for the site.
- There is to be no uncontrolled discharge of stormwater to the South Arm of the Hunter River.

Flood risk management environmental performance criteria are as follows:

- Finished site levels are to be greater than the level of the 1 in 100 year Average Recurrence Interval (ARI) of 1.35 metres AHD plus additional freeboard.

- Main drains and minor drains are to have the capacity to convey the 1 in 100 year and 1 in 20 year ARI, respectively.
- The drainage system is to have the capacity to contain the 1 in 100 ARI.

Water quality environmental performance criteria are as follows:

- Discharges to sewer would be in accordance with Trade Waste Agreements between operators and Hunter Water.
- Discharges to the South Arm of the Hunter River are to be in accordance with the requirements of Environment Protection Licence s (EPLs) and/or the Australia and New Zealand Environment and Conservation Council (ANZECC) guideline trigger values for marine water at 95 percent level of protection of species***, or in accordance with other suitable trigger values as agreed with DECCW***.

4.8.3 Environmental and Performance Management

To ensure the site functions in accordance with the environmental performance criteria for water management NPC would:

- Update the existing Port Emergency Response Plan to include any spill response measures specific to the site.
- ***Require Project applicants to provide a detailed description of waterfront structures and construction and operation methodology which will allow a detailed and robust assessment of potential environmental impacts at the land and water interface.***
- Require Project applicants to prepare individual Spill Management Plans and Emergency Response Plans which would identify activities and operations where potential exists for spills to occur, detail spill control and response strategies, identify equipment for use in spill response and cleanup, include a program for staff education on spill response procedures, and detail spill reporting requirements.
- Prepare an overall Soil and Water Management Plan addressing operational activities at the site. The Soil and Water Management Plan would:
  - Set out the regulatory guidelines and conditions of consent relevant to soil and water management;
  - Assign responsibilities and communication requirements;
  - Identify the objectives and environmental performance criteria for soil and water management at the site;
  - Identify the key water management issues, including flood risk, water quality and stormwater management;
  - Detail appropriate soil erosion and water quality mitigation and management measures, such as those detailed in Section 9.6.4 of the EA;
  - Detail an appropriate water quality monitoring program, focusing on the discharge points from the site to the South Arm of the Hunter River. The water quality monitoring program would identify sampling locations, the sampling methodology and equipment, the parameters to be analysed, the frequency of monitoring i.e., sample collection schedule, the duration of the monitoring program, the protocol for collection and analysis of samples (ensuring chemical testing is undertaken by NATA accredited laboratories), the equipment calibration methodology and schedule, and the quality control procedures;
  - Specify the reporting procedures;
  - Define corrective action and contingency measures in the event of exceedances of the relevant environmental performance criteria;
  - Include protocols for evaluating performance i.e. inspection checklists, maintenance records, reporting and assessment of monitoring results; and
  - Include a process for regularly reviewing and updating the Plan to identify continual improvement or modifications to procedures.
- Require Project applicants to prepare individual Soil and Water Management Plans (consistent with the overall Plan) specific to their operations and include a water quality monitoring program which focuses on monitoring water quality from individual facilities. The water quality monitoring program should identify the monitoring locations, parameters to be analysed, the sampling methodology and equipment, the frequency of the monitoring i.e. sample collection schedule, the duration of the monitoring program, the protocol for collection of samples and analysis of samples (ensuring chemical testing is undertaken by NATA accredited

laboratories), and the equipment calibration methodology and schedule. Project applicants would be required to provide the water quality monitoring results to NPC.

- If water quality monitoring consistently presents pollutant levels above the environmental performance criteria, additional water control measures would be implemented to reduce pollutant loads in stormwater discharged to the South Arm of the Hunter River.
- Periodically review the environmental performance criteria to facilitate continual improvement in the quality of stormwater discharged to the South Arm of the Hunter River.
- Construction Soil and Water Management Plans would be prepared by Project applicants to address potential water quality impacts during construction.

Groundwater

- ***Prepare a Groundwater Monitoring Plan (GMP) (building upon the existing HDC groundwater program) for the proposed concept prior to construction, which would provide the framework for continued groundwater monitoring across the site. Information regarding the monitoring methods and frequency of sampling, reporting and responsibilities for monitoring would be included in the GMP.***
- ***Require Project applicants to prepare GMPs in accordance with the overarching GMP, which would ensure that groundwater monitoring and reporting requirements for each project application are coordinated, consistent and implemented. These GMPs would form sub-plans of the OEMPs for the individual Project Applications.***
- ***Require Project applicants to include groundwater monitoring within the CEMPs.***

Stormwater

- ***Prepare a site-wide SMS which would build on elements in the Preliminary Design Stormwater Strategy (prepared by Parsons Brinkerhoff Partners) which have not been superseded by design changes. The design of the SMS would be coordinated across the site but would also reflect the specific requirements of each precinct.***
- ***Require Project applicants to develop the final design and arrangement of stormwater drainage infrastructure as part of the individual Project applications. The individual drainage systems would be designed in accordance with the overarching principles of the SMS described in Section 9.6.2 of the EA and integrated with the existing permanent stormwater infrastructure at the site***

4.9 Heritage and Cultural

Environmental performance objectives and criteria have not been developed in relation to heritage and cultural issues. HDC have undertaken to address the archaeological resources in areas to be impacted by the remediation works. ~~This includes the locations of all of the five items identified as having archaeological significance. NPC commits to:~~

- ~~Undertaking archaeological testing, monitoring, recording and salvage should there be impacts, such as the installation of footings and services, in those areas of archaeological potential (as identified in **Section 9.7** of this EA) that have not been investigated by HDC.~~
- ~~Undertaking archaeological testing, monitoring, recording and salvage should there be impacts, such as the installation of footings and services, in the area of the No.1 and 2 Pig Mills.~~
- ~~Undertaking archaeological testing, monitoring, recording and salvage should excavation within the area of the Hunter River Copper Smelting works exceed two metres.~~

NPC commits to the conditions of consent of the Excavation Permit 2005/S140/041 for future project approvals. In addition, the project approvals would adopt the Research Design and Methodology approved under the Excavation Permit. The commitments would be triggered only if heritage items are to be impacted by the proposed project and those heritage items have not already been subject to adequate archaeological assessment, recording and salvage. The conditions would refer to the following areas:

- ***No. 1 Blast Furnace***
- ***Ferro-Manganese Blast Furnace***
- ***No. 2 Blast Furnace***
- ***Hunter River Copper Smelting Co.***
- ***No. 1 Blower House***

- ***No. 3 Blast Furnace***
- ***No. 4 Blast Furnace***
- ***Open Hearth Change House***
- ***Original location of No. 1 Pig Mill***
- ***DC Substation***
- ***Steel Foundry***
- ***No. 1 Bloom and Rail Mill***
- ***Soaking Pits Building***
- ***No. 1 and 2 Pig Mills***

4.10 Infrastructure

Local service providers have advised that there is likely to be available capacity to service the proposed concept, particularly since there are a number of significant service upgrades planned for the area. Alternatively, there is also the potential for provision of services to the site via IIP or OneSteel. Environmental performance objectives and criteria have not been developed in relation to the provision of infrastructure and services to the site, however, NPC commits to:

- Preparing an Infrastructure Plan for the site to identify the services required in each precinct, identify the services corridors to and within the site, detail coordination and cost sharing mechanisms for provision of services, and include protocols for installation of services etc. ***NPC would consult with OneSteel and other neighboring landowners during preparation of the Infrastructure Plan through the existing mechanisms available with the MIEA.***
- Working with Project applicants regarding the provision of services to the site via services corridors in a coordinated manner. ~~and negotiating with Project applicants on cost sharing mechanisms for provision of services.~~
- ***The integration of any significant infrastructure investments required to be made by NPC and the IIP in a timely and equitable manner to achieve maximum benefit for all stakeholders.***

Project applicants would be responsible for consulting with local service providers regarding demand for and provision of, services when more detailed information is available on the service requirements for each facility.

4.11 Contamination

4.11.1 Objective

NPC has the following objective in relation to contamination:

> **To ensure development of the site is carried out in *such* a way as to preserve~~which would not compromise~~ the remediation outcomes as set out in the VRA and achieve an acceptable level of *risk* ~~nor pose a risk~~ to the environment *and*/or ~~personnel~~ *human health*.**

The objective for contamination would be achieved by ensuring Project applications meet the environmental performance criteria presented below.

4.11.2 Environmental Performance Criteria

Project applications would be required to comply with the following environmental performance criteria:

- Development would be carried out in a way which would not cause surface and/or subsurface displacement of the barrier wall.
- Development would be carried out in a way that minimises disturbance of the cap wherever possible. Where it is necessary to excavate beneath the capping layer, any excavated soils would be tested for contamination and disposed of appropriately in accordance with the CSMP.
- Development would be carried out in accordance with the requirements of the VRA and the CSMP.

4.11.3 Environmental and Performance Management

To ensure the site functions in accordance with the environmental performance criteria NPC would:

- Obtain confirmation from the Site Auditor that the design of the individual facilities complies with the requirements of the VRA and CSMP prior to the commencement of any works. Should there be any instances of non compliance, Project applicants would be required to alter the design or include appropriate management controls ~~to obtain compliance~~.
- Ensure that construction activities associated with subsequent Project applications would not commence until such time that DECCW determines contamination at the site no longer presents a significant risk of harm, or where DECCW determines that construction activities which start prior to completing remediation can be done so synergistically and without impact on the remediation outcome.
- Oversee development of the site to ensure that it is carried out consistent with the VRA and CSMP.

4.12 Socioeconomic

Environmental performance objectives and criteria have not been developed in relation socioeconomics. The proposed concept would result in economic benefits to the local area and the Hunter Region. The amenity of the area would be maintained through the mitigation and management of traffic, air quality, and noise impacts which are addressed in Sections 11.3, 11.5 and 11.6 of the EA.

NPC commits to continuing to liaise with the Mayfield CCC (or the reformed Mayfield CCC) to periodically update them on the status of development of the proposed concept and to discuss issues of concern to the community (refer to Section 11.12 of the EA). ***In addition to communication via the Mayfield CCC, NPC intend on reconnecting with original stakeholders and participants and will actively engage with community groups. NPC are committed to providing all stakeholders with clear and easily accessible information and to that end will re-adopt all effective communication options previously used as well as additional measures as necessary.***

4.13 Visual

The proposed concept would be a state-of-the-art facility and would result in a positive visual transformation of the site. Therefore, environmental performance objectives and criteria have not been developed. However, NPC would require Project applicants to prepare Lighting and Material Finishes Management Plans for the individual facilities. The plans would include requirements to minimise the potential for visual impacts such as the use of directional lighting to minimise light spill into surrounding areas during the night time and the use of suitable colours and materials for the buildings and other structures to minimise reflectivity and contrast. NPC would review the individual plans to ensure a level of consistency in the visual appearance of the individual facilities across the site.

4.14 Ecology

The proposed concept would not have an adverse impact on terrestrial flora and fauna at, or in the vicinity of, the site, and therefore, environmental performance objectives and criteria have not been developed. However, NPC would require Project applicants to prepare Landscape Management Plans for individual facilities ***(where appropriate)*** and include a requirement to landscape appropriate areas of the site using native vegetation. It is important to note that with the exception of the landward boundary of the site, there would be very few areas at the site available for landscaping. NPC would review the individual Landscape Management Plans.

4.15 Waste Management

Environmental performance objectives and criteria have not been developed in relation to waste management. However, NPC would require Project applicants to prepare Waste Management Plans (WMPs) for the site, addressing waste management during both construction and operation. The WMPs should emphasise the potential for recovery and reuse of waste, the potential to minimise waste generation and include specific waste management requirements for waste types identified across the site consistent with the waste management strategies included in Section 9.13 of the EA.

4.16 Climate Change and Sustainability

NPC is committed to sustainability and would require Project applicants to incorporate sustainability strategies into the design and operation of their developments.

Project applicants would be responsible for:

- Incorporating sustainability strategies into the design of individual facilities. At a minimum, sustainability strategies would be required to address the use of renewable energy and energy conservation, waste reduction, reuse, and recycling, and water conservation.
- Auditing energy and water consumption, and waste generation so as to monitor performance and identify areas for improvement. Auditing and performance management requirements would be included in the Sustainability Plans.
- Sustainability Plans detailing sustainability goals and objectives, and sustainability strategies would be prepared by Project applicants.

Appendix A

Revised Transport Assessment

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