NSW GOVERNMENT | Planning

Modification to the Kooragang Coal Terminal, Stage 4 Project

Proposal by Port Waratah Coal Services

MP 06_0189 MOD 1

Modification of Minister's Approval under Section 75W of the *Environmental Planning and Assessment Act 1979*

May 2010

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EXECUTIVE SUMMARY

This assessment report relates to an application by Port Waratah Coal Services (PWCS) to modify its existing approval for the Kooragang Coal Terminal (KCT, MP 06_0189) under Part 3A of the *Environmental Planning and Assessment Act 1979*. The approval, granted by the then Minister for Planning on 13 April 2007, allows the operational throughput capacity of the terminal to be increased from 77 Million tonnes per annum (Mtpa) to 120 Mtpa through enhancements of the existing and approved operations.

The Proponent is seeking to modify the existing approval by providing additional infrastructure at the terminal to achieve increased 'sprint capacity' to meet the overall approved 120 Mtpa throughput following short term disruptions to operations from a variety of occurrences. The additional infrastructure is referred to as the Stage 4 project, and involves the construction and operation of a fourth dump station, a fourth shiploader, and associated coal handling infrastructure.

The Proponent considers that the operational efficiencies expected from the Stage 4 Project will continue to improve the KCT's environmental performance through incorporation of more efficient project components. The project will also maintain the operation's contribution to the economy as an effective component of the Hunter Valley Coal Chain.

The project will be operated as an integrated component of on-going KCT operations. It will not increase the currently approved 120 Mtpa throughput capacity of KCT but will involve minor changes to the existing approved footprint with the additional infrastructure to be constructed on previously disturbed land.

The key issues associated with the Stage 4 Project relate to noise and vibration, air quality, water quality, traffic and transport, and visual amenity. Eight submissions were received as a result of the public exhibition and referral to other departments and agencies. Submissions were received from the Department of Environment, Climate Change and Water, NSW Office of Water, Newcastle Port Corporation, NSW Maritime, Roads and Traffic Authority, Newcastle City Council, Australian Rail Track Corporation and Kooragang Bulk Facilities. None of these objected to the project but raised issues for the Department's consideration, as well as recommended conditions of approval.

Overall, the assessment found that the addition of Stage 4 to the KCT operations would result in minimal environmental impact to the surrounding environment and local community. The project is encompassed by an existing comprehensive environmental management system at the KCT, including a water management system, and air quality and noise mitigation measures. It has also been designed to comply with existing provisions of its Environmental Protection Licence under the *Protection of the Environment Operations Act 1997.*

The Department has assessed the modification request, supporting Environmental Assessment, submissions and the Proponent's response to submissions received from the public exhibition of the proposal. It is satisfied that the combined application of existing and recommended conditions of approval, environmental management safeguards being implemented at the coal terminal, and proposed Statement of Commitments will ensure that potential impacts are minimised during the construction and operational phases of Stage 4.

Consequently, the Department recommends approval of the Stage 4 Project, subject to the recommended conditions of approval.

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1. BACKGROUND

1.1 Background

Port Waratah Coal Services (PWCS), the Proponent, has lodged an application to modify the Kooragang Coal Terminal (KCT) 120 Million tonnes per annum (Mtpa) Project. The proposed modification seeks to provide increased 'sprint capacity at the terminal through additional infrastructure to increase its ability to respond to short term disruptions in coal throughput.

The Proponent currently owns and operates two coal terminals in the Port of Newcastle area: one at Kooragang Island and the other at Carrington. The coal terminals receive, stockpile, blend and load Hunter Valley coal onto ships for export. The combined approved throughput capacity of the terminals is 145 Mtpa, consisting of 120 Mtpa from KCT and 25 Mtpa from the Carrington Coal Terminal. In 2009, the KCT handled 72 million tonnes of coal through the facility.

The KCT was originally owned by BHP Billiton and has operated it since 1984. PWCS purchased and took over its operation in 1990. Some sections of the land occupied by the coal terminal are owned by the Newcastle Port Corporation and NSW Maritime. The rail line and loop are operated and maintained by the Australian Rail Track Corporation. All coal delivered to the KCT is by rail.

1.2 Existing Operations

The activities currently performed at the KCT are as follows:

- coal is delivered to the terminal by rail and is discharged from rail wagons within the enclosed rail receival station;
- as the coal leaves the rail receival station, it is also sampled for quality checks;
- coal is then transferred by conveyors to the stockpile areas (also referred to as stockyards);
- in the stockyard, rail mounted 'stackers' place coal in pre-designated areas. Different types and cargoes of coal are stacked into separate stockpiles;
- coal is retrieved from the stockyard by rail mounted 'bucket-wheel reclaimers'; and
- coal is conveyed to the ship loading facility for loading onto ships.

The terminal currently prepares and handles over 80 different coal types. The average time to load and dispatch a ship is less than two days.

1.3 Previous Planning Approvals

The KCT received approval for its current operations in 1982 (Stages 1 and 2), 1996 (Stage 3) and 2007 (120 Mtpa. Project).

Stages 1 and 2 was approved by the then Minister for Public Works, and involved the construction and operation of road and receival facilities; coal stockpiles Pad A and Pad B, shipping berths K4 and K5 and associated conveyors, stackers and reclaimers. The 1982 consent limited the capacity throughput of the coal terminal to 44 Mtpa.

The Stage 3 expansion was approved by the then Minister for Urban Affairs and Planning (DA No. 35/96) under Part 4 of the *Environmental Planning and Assessment Act 1979* (the Act). The approval provided for two additional stockpiles Pad C and Pad D; a third shipping berth and shiploader (K6 wharf); a third coal receiver station and fourth shipping berth (K7 wharf). The 1996 consent limited the capacity throughput of the terminal to 77 Mtpa. Some elements of this expansion are yet to be established and will be developed progressively to meet the future demands of the export coal industry.

The 120 Mtpa Project, approved under Part 3A of the Act, allowed the throughput capacity to be increased from 77 to 120 Mtpa through upgrades and improvements to existing and approved operations at the terminal. To date, the upgrading work is 50% complete and operation will commence when the throughput capacity at KCT exceeds 77Mtpa.

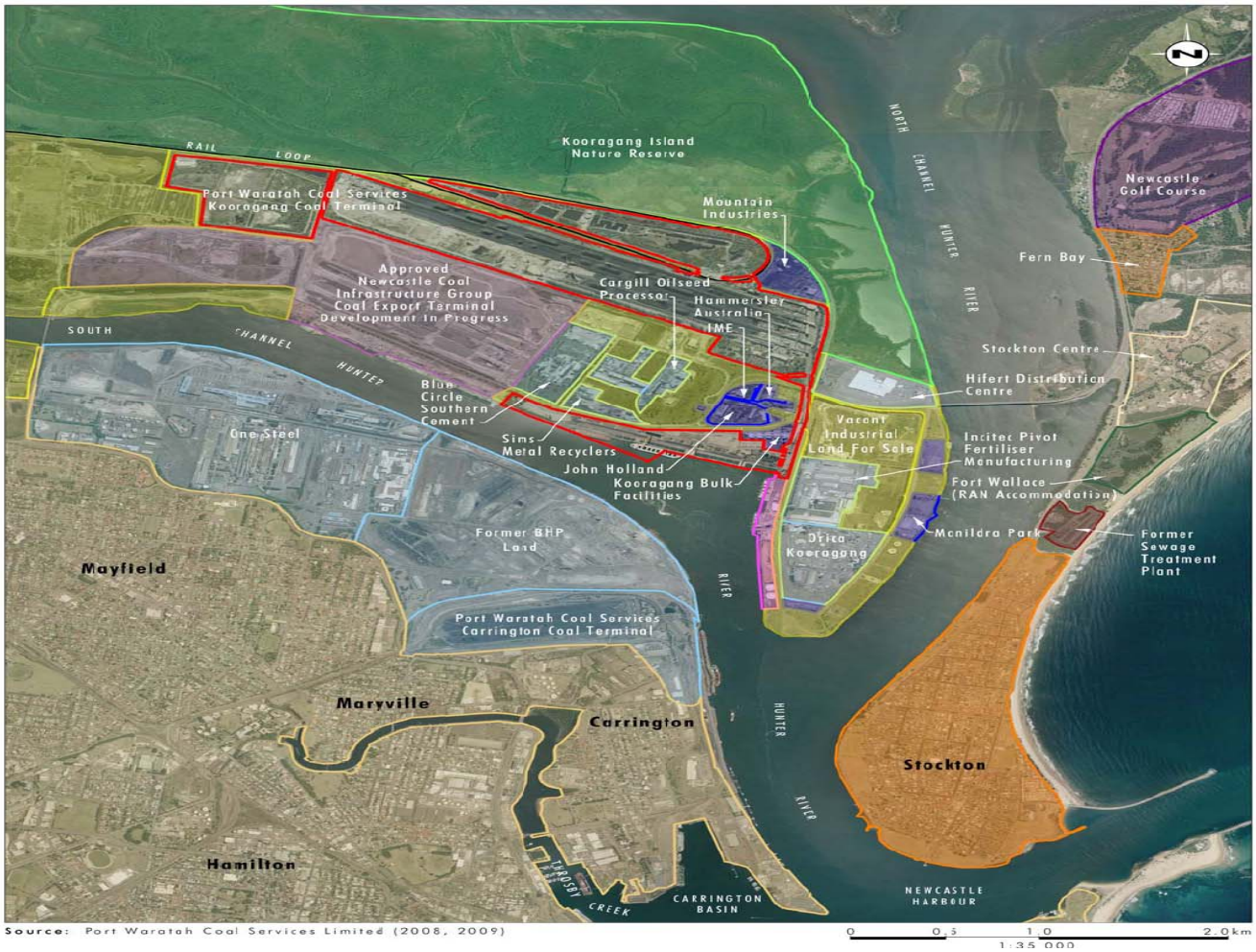
1.4 The Surrounding Environment

The KCT operations are located on the south eastern side of Kooragang Island on the South Arm of the Hunter River, approximately 2 km north of Newcastle. The coal terminal is one of a number of industrial and port facilities on the Island which includes the adjacent Kooragang Bulk Facilities and Newcastle Coal Infrastructure Group's Coal Export Terminal. Industrial activities in the vicinity of KCT include cement production, concrete batching and recycling, concrete building products, oilseed processing, fertiliser manufacturing and distribution and ammonium manufacturing. Port facilities, other than export coal operations, mainly handle raw materials and agricultural products.

The Kooragang Nature Reserve adjoins the northern boundary of the terminal. The former BHP Steelworks site and One Steel lie to the south and south-west of the KCT across the Hunter River.

The nearest urban areas are Fern Bay (approximately 1.7 km to the east); North Stockton (approximately 1.5 km to the south-east); and Mayfield (approximately 1.7 km to the south-west). Figure 1 shows the location of the KCT and surrounding land uses.

Figure 1: Location of the Kooragang Coal Terminal



2. APPROVED PROJECT

The subject of the proposed modification is known as the KCT 120 Mtpa project, which was approved by the then Minister for Planning on 13 April 2007. As stated above, this project involves increasing the plant's throughput capacity from 77 Mtpa to 120 Mtpa by achieving operational efficiencies through retrofitting and upgrades to both existing and approved plant and equipment. The capital value of this project was estimated at $75 million.

All of the project's capacity improvement initiatives are contained internally within the approved KCT footprint and are progressively being implemented. The operational phase is defined by an annual throughput exceeding 77 Mtpa, which has not occurred to date. Key environmental issues included greenhouse gas considerations, air impacts particularly associated with dust emissions, and noise impact in neighbouring residential areas particularly Fern Bay and Stockton.

Approval of the project was subject to 48 conditions that specifies relevant limits and environmental outcomes, and requires the preparation of environmental management plans specific to construction and operational activities at the terminal.

The KCT is classified as a scheduled premise under the *Protection of the Environment Operations Act 1997* and is subject to an existing Environmental Protection Licence under this Act.

3. DESCRIPTION OF PROPOSED MODIFICATIONS

3.1 Proposed Modification

The Proponent is seeking a modification to the Minister's approval of the 120 Mtpa project under section 75W of the Act. The proposed modification involves the construction and operation of additional infrastructure at the KCT, known as the fourth coal handling stream and referred to as the Stage 4 Project. The project is comprised of a fourth dump station, a fourth ship loader, and associated coal handling infrastructure (including augmentation to the rail loop, conveyors, transfer houses, and buffer bins). The capital value of the project is estimated at $500 million. Figure 2 illustrates the various components of the proposed Stage 4 Project.

Figure 2: Proposed Stage 4 Project

The project will not increase the approved throughput capacity of KCT to above 120 Mtpa, but will have minor changes to the approved footprint. The footprint changes primarily relate to the augmentation of the rail loop to include additional inbound and outbound tracks to and from the dump station.

Construction of the project is estimated to take approximately two years, with activities peaking over a six-month period between the 10th and 15th month. The coal terminal would continue to operate 24 hours per day, 365 days per year. The operation of the Stage 4 Project will only require an estimated eight additional staff. Table 1 presents an indicative construction schedule for the project.

Table 1 – Indicative Construction Schedule for the Stage 4 Project

Key Construction Component	Approximate Construction Duration	Indicative Construction Schedule
Fourth Dump Station	18 months	Months 1 to 18
Conveyors Sample Station and Transfer Stations	18 months	Months 5 to 22
Fourth Shiploader	13 months	Months 11 to 22
Rail Loop Augmentation	13 months	Months 10 to 21
Commissioning	3 months	Months 22 to 24

3.2 Justification of the Modification

The continuing international demand for coal has provided the impetus for PWCS to increase the efficiency of its coal handling and delivery infrastructure at KCT. PWCS has identified a potential benefit to have additional 'sprint capacity' at the terminal to address demand fluctuations and short term disruptions to operations. Disruptions result from a variety of occurrences such as closures of the coal transportation chain, unplanned maintenance outages and port and rail interruptions due to bad weather. Short term delays in throughput result in large variations in daily coal throughput rates, which subsequently limit overall throughput capacity. The additional operational efficiency provided by 'sprint capacity' would improve the average daily throughput rates, providing greater opportunity to consistently reach the overall approved 120 Mtpa throughput capacity at KCT

In addition, PWCS considers that the operational efficiencies expected from the Stage 4 Project will continue to improve the KCT's environmental performance through incorporation of more efficient project components. The project will also mean maintaining the company's significant contribution to all levels of the economy as an effective element of the Hunter Valley Coal Chain.

3.3 Consequences of Not Proceeding

The Environmental Assessment has identified the need for sprint capacity in coal handling and shiploading capacity through the Stage 4 Project and demonstrated that the project can be undertaken with minimal environmental and community impact. On this basis, the Proponent sees no reason not to proceed with the project and considers that if it was not approved, the opportunity to yield substantial additional coal supply capacity and substantial economic benefits to the local community, region, state and nation will be lost.

4. STATUTORY CONTEXT

4.1 Modification of a Minister's Approval

The modification application has been lodged with the Director-General pursuant to section 75W of the Act, which provides for the modification of the Minister's approval, including revocation or variation of a condition of the approval, or imposition of an additional condition of approval and changing the terms of any determination made by the Minister under Division 3 in connection with the approval.

Under section 75W(2), the Minister's approval for a modification is not required if the project, as modified, will be consistent with the existing approval under Part 3A of the Act. In this instance, the proposed modification as described above involves considerable changes that are considered not to be consistent with the approved project. The proposal introduces a fourth coal loading stream which involves the construction and operation of additional infrastructure and changes to the approved footprint. Accordingly, the Department considers the proposed changes to be not consistent with the original approval and therefore require a modification to the Minister's approval.

Section 75W(3) of the Act enables the Director-General to issue environmental assessment requirements (DGRs) for a proposed modification that the Proponent must address before the matter will be considered by the Minister. DGRs have been issued in this case.

Section 75W(4) of the Act gives the Minister the authority to modify the approval (with or without conditions) or not approve the modification. Following consideration of the proposed modification (see below), the Department recommends that the modification be approved, subject to additional new conditions to the Minister's approval as attached to this Report.

4.2 Permissibility

The KCT site is zoned Port and Industrial 4(b) under the *Newcastle Local Environmental Plan 2003* (LEP) and is a permissible development under this zoning.

One component of the project – the proposed conveyor bridge over Teal Street is zoned Special Uses 5(a) and is a prohibited development under this zoning. However, this prohibition does not apply to the functions of Division 5, Part 3A of the Act, under which the Minister will make a determination under section 75W of the Act.

4.3 Approval Authority

On 25 January 2010, the Minister for Planning delegated his powers and functions under section 75W of the Act to the Director-General and a number of Executive and senior management staff, where less than 10 public submissions in the

nature of objections are received in respect of the modification request. There were only eight submissions received from the public exhibition of the proposed modification and none of these objected to the proposal. Consequently, the proposed modification will be determined under the Minister's delegation.

5. CONSULTATION AND ISSUES RAISED

Under section 75W of the Act, a request for a modification of approval is not required to be publicly exhibited. Notwithstanding, due to the scope and nature of the modifications, the application was publicly exhibited from 21 November to 9 December 2009, and made publicly available in accordance with section 75X of the Act.

A total of eight submissions were received on the modification, comprising of:

- seven submissions from public authorities; and
- one from the general public.

None of these objected to the proposal but raised issues for the Department's consideration, as well as recommended conditions of approval. A summary of the issues raised in submissions is included in Table 2, and further detail is included in Section 6.

Table 2: Summary of issues raised

Submission – Public Authorities	Issues/Comment
Department of Environment, Climate Change and Water (DECCW)	• if approval for the project is granted, a variation to the environmental protection licence for the project would be required, subject to a separate application to DECCW to vary this licence prior to any works commencing.
NSW Maritime	• has no objection to the proposed works.
Newcastle Port Corporation (NPC)	• supports the proposal subject to compliance with conditions provided. • the majority of suggested project approval conditions relate specifically to management of shipping movements within the port of Newcastle. • the proponent shall take all precautionary measures to prevent the spread of harmful aquatic organisms by ballast water, sediments or biofouling. • the proponent shall take all precautionary measures to prevent the pollution of waters of the Port of Newcastle.
Roads and Traffic Authority (RTA)	• has no objection to the proposed development. • the construction traffic management protocol shall detail management of heavy vehicle movements associated with the project during construction. • the bridge structure over Teal Street shall be designed and constructed to RTA requirements. • the developer will be required to enter into a works authorisation deed with the RTA. • sufficient provision shall be made for parking on site.
NSW Office of Water (NOW)	• comments made relate to statutory requirements under the NSW water related legislation. Water demands associated with any future expansion of the coal terminal facility may necessitate licensing requirement consideration under NSW water related legislation.
Newcastle City Council (NCC)	• considers that the greenhouse gas emissions study is dominated by electricity usage, and that clarification is required regarding the electricity usage figures. • suggests that a timeframe be provided regarding the proposed retrofitting to stages 1 and 2 plant and equipment to ensure the implementation of acoustic measures prior to operation of stage 4. • recommends that information be provided regarding potential impacts of the proposed shiploader on the estuarine environment and on water pollution; also, impacts of sea level rise on the proposed shiploader. • recommends that further information be provided regarding potential contamination contained within the excavated soil and proposed treatment and disposal methods.

	• requires that temporary on-site parking meet relevant standards and to be included in documentation for a construction certificate application, and that a construction traffic management plan be submitted to council for approval.
Australian Rail Track Corporation (ARTC)	• does not have any comments in relation to the proposal.
Kooragang Bulk Facilities (KBF)	• concerns regarding the Stage 4 proposed conveyor which will cross over a conveyor owned by KBF. Suggested conditions requiring fire protection and other safety measures.

5.1 Response to Submissions

Upon review of the submissions received, the Department directed the Proponent to respond to all issued raised in the relevant submissions. A response to submissions was received by the Department on 19 February 2010 and is contained in Appendix C.

6. ASSESSMENT OF ENVIRONMENTAL IMPACTS

The Department has identified the following key environmental issues associated with the modification:

- noise and vibration
- air quality
- water quality
- traffic and transport
- visual amenity

All other issues are considered to be minor and have been adequately addressed as part of the Proponent's assessment and response to submissions. However, some of those issues are briefly discussed in section 6.6 as they form part of the Director-General Requirements or need clarification by the submissions received.

6.1 Noise and Vibration

Issue

Construction and operation of the Stage 4 project would involve significant noise emissions from sources such as plant and equipment, truck movements, and rail movements. A comprehensive noise assessment was undertaken to predict the noise levels that would result from construction and operation of Stage 4 and to assess these levels against relevant criteria and specified limits in the existing approval conditions for the 120 Mtpa project. The assessment also included construction vibration, construction transport generated noise and cumulative noise impact of project operation with nearby industrial development.

Construction

The Environmental Assessment indicated that the Stage 4 construction activities are consistent with the previously approved daytime construction work. Condition 2.7 of the existing approval restricts activities that would generate an audible noise at any residential premises to between 7am and 6pm, seven days a week. Otherwise, if not audible at such premises, construction may be undertaken outside of these hours, seven days a week.

The previous approval considered the *Environmental Noise Control Manual* (ENCM) in determining the noise criteria to apply to construction activities. The construction noise assessment for Stage 4 was undertaken based on DECCW's *Interim Construction Noise Guideline,* which has replaced the ENCM. The applicable noise criteria for Stage 4 construction activities are set out in Table 3 below.

Table 3: Construction Noise Limits

Residential Receiver Area	LAeq(15 minute) Construction Daytime[1, 2]
Fern Bay North	54
Fern Bay West	57
Fern Bay West	50
Stockton West	52

Stockton East	51
Mayfield West	55
Mayfield	56
Carrington	52

Note 1: 7 days per week, 7am to 6pm
Note 2: permitted during evening and night-time if construction noise indiscernible at residential receivers.

The Proponent currently carries out construction noise monitoring for the ongoing construction of the Stage 3 and the 120Mtpa projects. A review of the noise measurements undertaken for these projects confirms that noise emissions are not discernible at the nearest residential receiver areas of Fern Bay and Stockton. The Environmental Assessment anticipates that with the continued implementation of existing noise controls and safeguards at KCT, intrusive construction noise emissions will remain indiscernible at the nearest residential area and below the approved construction noise limits.

Road traffic noise associated with Stage 4 construction activities was assessed in accordance with the RTA's *Environmental Criteria for Road Traffic Noise*. The assessment found that on Cormorant Road (where the maximum increase in traffic flow will occur), the anticipated 1.4% increase in daytime vehicle movements contribute <0.1 dB increase in existing daytime amenity noise level and is negligible. Similarly, the anticipated 2.6% increase in night time vehicle movements corresponds to a small 0.1 dB increase in the existing night time amenity noise level and is also negligible.

Impact piling rigs are expected to be used during the rail receival and conveyor construction activities. Assessment of vibration impact from piling activities was conducted in accordance with DECCW's "*Assessing Vibration: A Technical Guideline" and* the German Standard DIN 4150-3 1999 "*Structural Vibration Part 3: Effects of Vibration on Structures*" The assessment concluded that annoyance risk to all residential receivers is negligible as the nearest dwellings are well beyond 180 m (predicted safe buffer distance) from the construction and vibratory activities. Similarly, the damage risk to the nearest commercial and industrial receivers are considered minimal. However, there is a potential risk of annoyance to an adjacent commercial property (KBF Administration Building). The Environmental Assessment anticipates that vibration monitoring and short term piling energy management may be required during piling activities to achieve compliance with the relevant criteria.

Operation

Operations at KCT will be managed in accordance with the 2007 approval for the 120 Mtpa Project once the throughput capacity exceeds 77 Mtpa. The potential noise impacts of the Stage 4 Project have therefore been assessed against the noise limits established in that approval, as shown in Table 4.

Table 4: Operational Noise Limits

Residential Receiver Area	LAeq(15 minute) Operation Day, Evening, Night	LAeq(night) Operation Night	LA1(I minute) Operation Night
Fern Bay North	46	43	55
Fern Bay West	50	47	55
Fern Bay East	49	46	55
Stockton West	50	47	57
Stockton East	49	46	56
Mayfield West	41	37	56
Mayfield	44	38	58
Carrington	42	38	52

Notes: The maximum allowable noise contributions apply under:

a) meteorological conditions of: wind speeds up to 3 ms^{-1} at 10 metres above ground level; or
b) temperature inversion conditions up to 3C per 100 metres and wind speeds up to 2ms^{-1} at 10 metres above the ground.

Operational noise modelling was conducted to predict the intrusive LAeq(15 minute) and amenity LAeq(period) levels at the nearest residential receivers at Fern Bay and Stockton. The modelling incorporated all significant items of plant and equipment, including coal trains operating on the KCT rail loop working concurrently, and coal throughput at the maximum approved 120 Mtpa. Noise monitoring data from the current noise monitoring program was also utilised to form part of the assessment. This approach provides for the assessment of the total predicted noise emissions from the current approved KCT and proposed components of Stage 4.

Both intrusive and amenity noise levels from the operation of the Stage 4 Project at the closest residential receivers were predicted to meet the approved noise limits under the 2007 approval with no incremental noise impacts associated with the Stage 4 Project, subject to the ongoing application of the noise improvement program to meet condition 2.10, to address a 1dBA modelled increase.

The potential noise impact on surrounding commercial and industrial receivers was also assessed. Of the identified receivers, the closest to the KCT which is likely to experience some impact is the Kooragang Bulk Facilities Administrative Building. In the vicinity of this building, three existing KCT conveyors pass over the KBF conveyor, and a proposed new conveyor will also cross over this structure. To ensure that the Stage 4 Project does not introduce any noise increase at the KBF Administrative Building and to meet the approved maximum operating noise limit of 70dBA at industrial premises, the existing idler rolls to KCT's Stage 1 and 2 conveyors are proposed to be replaced. The consent allows this limit to be exceeded in circumstances where the best technology that is economically available has been employed to minimise noise emissions.

The coal rail network is operated by the ARTC and railway noise emissions are regulated via its Environmental Protection Licence. There are no additional train movements associated with the Stage 4 Project. Nonetheless, the noise modelling incorporated the noise emissions from existing operation of the KCT rail corridor. It predicted that the daytime 65dBA criterion and the night-time 60dBA criterion are generally achieved at distances greater than 100 metres and 200 metres respectively, and the train noise levels would not have an impact on sensitive receivers.

Cumulative noise assessment of amenity levels at night time was undertaken to determine if the introduction of the Stage 4 Project would result in incremental increases in such levels. The assessment was conservative in that it assumed maximum noise emission at any one time from a number of existing, approved and proposed industrial developments in the vicinity of Kooragang Island. The assessment concluded that there would no incremental increases in the cumulative industrial noise amenity levels a result of the Stage 4 operation.

In conclusion, the noise emissions predicted from the operation of Stage 4 would meet the specified noise limits at sensitive receiver locations. The predicted noise levels are substantially lower than those predicted for the previously approved Stage 3 Expansion project. Specific noise control achievements implemented during the Stage 3 Expansion include a 15 to 18dBA reduction in individual conveyor drive sound power levels and a 13 to 14dBA (per 100 meters) reduction in sound power levels of stockyard and transfer conveyors.

Issues raised in submissions

The noise assessment stated that compliance with noise levels outlined in condition 2.8 of the 120 Mtpa approval may be achieved with Stage 4 operational, by retrofitting acoustic design measures to Stage 1 and 2 equipment. Newcastle City Council suggested that a timeframe be provided on the proposed retrofitting to ensure that acoustic measures are implemented prior to operation of Stage 4 on this receiver.

Consideration

The Department considers that the noise assessment conducted for Stage 4 construction and operation demonstrates that noise impacts from both phases can be adequately managed to meet the established noise limits for the 120 Mtpa Project. The application of current operation noise limits to Stage 4 is considered to be appropriate because the limits have been determined in accordance with the *Interim Construction Noise Guideline* and *Industrial Noise Policy*, there is no change in throughput capacity proposed, and proven best available technology is committed to be applied to Stage 4 infrastructure.

In relation to the potential annoyance risk on the nearest industrial receiver (KBF Administrative Building) from piling activities, the Department notes that the Proponent would employ vibration monitoring and short term piling energy management where required to achieve compliance with the relevant criteria.

In response to Council's suggestion regarding a timeframe for the retrofitting of Stages 1 and 2 equipment, the Submissions Report indicated that as Stage 4 is an integral component of KCT operations, timing of operations will respond to the increase in demand for coal throughput at KCT. The Department notes that retrofitting (designed to reduce the overall noise emissions by at least 1dBA), is part of the Proponent's commitments and forms part of its continuous noise improvement program. Hence, the timing for retrofitting should remain with the Proponent, as this will be governed by existing conditions which requires ongoing compliance with the current noise criteria. The Department also notes that the Proponent has committed to continue investigating and implementing new technology and practices

to target noise reduction, and to install idler rollers in the existing transfer conveyors adjacent to the KBF building in accordance with Stage 4 noise performance specifications to mitigate any further impacts.

The Department considers that existing conditions of approval along with the Proponent's committed noise reduction measures would ensure that noise impacts from the Stage 4 Project are managed to acceptable levels. One of these conditions requires the Proponent to undertake an annual noise monitoring of the KCT operations in surrounding locations. The results of this monitoring will provide an indication of the KCT noise performance as the Proponent progresses with its expansion program.

6.2 Air Quality

Issue

Emissions of dust are the main air quality issue associated with the Kooragang Coal Terminal (KCT) facility. The potential dust generating activities associated with the KCT include:

- material unloading/loading points;
- stacking and reclaiming to and from coal stockpiles; and
- wind erosion from coal stockpiles.

A large array of dust controls and safeguards are currently in place and are proposed to ensure that air quality outside the KCT is not adversely affected by emissions from the operation. These include engineering controls, planning controls and operational controls as required by conditions of approval issued for previous stages of the project.

The Proponent has an air quality monitoring system in place comprising of two high volume air samplers located at Fern Bay, measuring total suspended particulate matter (TSP) and particulate matter (PM_{10}), and 13 dust deposition gauges within the surrounding residential areas. Annual monitoring results from 2001 and 2008 indicate that dust concentration (TSP and PM_{10}) and dust deposition levels at the closest residential areas of Fern Bay and Stockton are below DECCW's relevant air quality criteria.

The assessment by PAEHolmes of potential air quality operational impacts has been undertaken based on the procedures outlined by the DECCW in their guideline document '*Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*' 2005. Total dust emissions have been estimated by analysing the activities taking place at the site for operation with 120 Mtpa throughput rate and with the Stage 4 infrastructure, including the additional dump station, transfer station and shiploader.

The proposed Stage 4 Project will not alter the approved stockpile areas, the major potential source of dust generation associated with the KCT. Therefore wind erosion from stockpile areas will remain unchanged for current approved KCT operations as part of the Stage 4 Project. The main source of additional dust is expected to be from the additional transfer station.

Relevant health goals for TSP and PM_{10} are outlined in Table 5. The TSP and PM_{10} annual average goals relate to the total dust in the air and not just the dust from the Project.

Table 5: DECCW Assessment Criteria for Particulate Matter Concentrations

Pollutant	Standard / Goal	Averaging Period	Agency
Total suspended particulate matter (TSP)	90 μg/m3	Annual mean	National Health & Medical Research Council
Particulate matter <10 μm (PM10)	50 μg/m3	24-hour maximum	DECCW
	30 μg/m3	Annual mean	DECCW
	50 μg/m3	24-hour average, 5 exceedances permitted per year	National Environment Protection Measures

No major dust generating activities (such as large scale earthworks, etc) are required in constructing the fourth dump station and fourth shiploader. The proposed construction will result in minimal dust emissions and while there may be a potential increase in the dust deposition level for short periods within the site, it is highly unlikely that dust emissions from the construction activities will cause an increase in the particulate levels in nearby industrial or residential areas.

Airborne dust also has the potential to cause nuisance deposition impacts. Table 6 shows the maximum acceptable

increase in dust deposition over the existing dust levels.

Table 6: DECCW Criteria for Dust Deposition

Pollutant	Averaging Period	Maximum increase in Deposited Dust Level	Maximum Total Deposited Dust Level
Deposited dust	Annual	2 g /m^2/month	4 g/m^2/month

The annual TSP for the additional Stage 4 infrastructure is estimated to increase by an additional 2,481 kg/year. As a result, the annual dust emissions from KCT would increase from approximately 369 tonnes to 371 tonnes, an increase of only 0.75 per cent, a minor increase from the currently modelled dust emissions from KCT.

Predicted levels of PM_{10} concentrations and predicted annual average dust deposition are below the DECCW criterion at the nearest residential areas (approximately 2km from the major site dust sources) and at industrial receptors on Kooragang Island. Dust deposition increases of less than 0.05g/m^2 /month at Fern Bay are insignificant and below the deposition criteria. The project will also not cause cumulative dust concentration to exceed relevant criteria, except under extreme circumstances when regional dust levels are already very close to the criteria.

Issues raised in submissions

No submissions raised issues with regards to air quality.

Consideration

The Department is of the opinion that whilst there is potential for air quality impacts during construction and operation of the Stage 4 Project, these can be managed through established management practices.

The Department is satisfied that the Proponent's commitments adequately ensure that these established management practices will be followed for the Stage 4 Project component of works. The Proponent has committed to the following:

- during operation of the Project, the DECCW Assessment Criteria for particulate matter concentrations, and dust deposition criteria will be met by the Project;
- existing dust controls and safeguards at KCT will continue to be implemented in accordance with current design procedures and operational procedures; and
- existing dust controls and safeguards at KCT will be incorporated into the design, construction and operation of the Stage 4 Project.

An integral part of ongoing air quality management is the continued implementation of a specific air quality monitoring program. The Proponent has designed the program in consultation with the DECCW and Newcastle City Council. The focus of the program is to monitor compliance with air quality standards in the nearby residential areas. The monitoring program also seeks to document the contribution of the operations at KCT to the air quality in the area in general. By doing so, the results of the monitoring program identify any need for further strengthening of dust controls in certain areas of the operation. The Proponent has committed to continued air quality monitoring in accordance with current approval conditions and the associated dust monitoring program developed in consultation with DECCW and Newcastle City Council.

The Department also notes that the Proponent's proposed introduction of current technology for coal handling associated with the Stage 4 Project will further strengthen the dust controls. This includes the use of soft flow chutes to maintain a better coal trajectory from one conveyor to the next and thereby minimise dust emissions. In addition, improved belt cleaning systems will continue to be installed to remove greater quantities of coal and further reduce the potential for carry back dust.

6.3 Water Quality

Issue

Surface Water Quality

The Proponent has an existing totally closed water management system operating at the KCT to meet the design requirement of a 1 in 100 year design storm event or equivalent. The existing management system encompasses all established plant and equipment within the approved KCT footprint. The objective of this system is to maximise to the

capture of water (that is collected within the existing footprint for treatment and re-use as part of KCT operations) to the design capacity.

The Stage 4 Project includes the construction and operation of additional plant and equipment which includes minor areas outside of the approved KCT footprint. These areas relate to the proposed augmentation to the rail loop to service the proposed fourth dump station, and are located in previously disturbed areas within the existing rail corridor servicing KCT (managed by ARTC). All other plant and equipment associated with the Stage 4 Project is contained within the existing KCT water management system and will be managed through the continued use of this system as part of ongoing KCT operations.

During construction of the proposed plant and equipment associated with Stage 4, the Proponent will install all appropriate erosion and sediment control structures to manage water quality. Water captured in areas disturbed through construction activities will be directed to the existing KCT water management system for treatment and re-use on site. This includes water from additional areas associated with the rail loop, which will be captured and diverted to the existing KCT water management system, located within the centre of the rail loop.

Upon the commissioning of the proposed rail loop augmentation, the ongoing management of water from this area will revert back to the ARTC, as part of the management of the rail loop servicing KCT. The Proponent will consult with ARTC throughout the design, construction and commissioning process for the augmentation in relation to the long term management of water within this area. The ARTC water management facilities effectively service the entire rail loop corridor and include embankments and drainage structures to allow water to drain into stormwater systems in the area of the rail corridor. The Proponent indicated that water management is a critical factor in rail track design and linking into the existing facilities will be addressed in detail at the design stage.

Groundwater Quality

Development of the Stage 4 Project includes excavation and dewatering associated with construction of a new dump station, a new conveyor to the wharf, and a new shiploader. Douglas Partners conducted an assessment of the potential for impacts to groundwater associated with the Stage 4 Project.

Components of this project that would potentially impact on groundwater are those elements that may extend below the known water table, including:

- fourth dump station – this will include an excavation of approximately 15 metres deep, 12 metres wide and 66 metres long, which is consistent with the design of the existing dump station infrastructure, and will require the removal of approximately 10,500m^3 of material;
- inbound coal conveyor – this conveyor will extend from the approximate base of the fourth dump station linking to the stockyard area, and will extend below ground for approximately 200 metres to the east of the proposed dump station, requiring the excavation of approximately 10,000m^3 of material; and
- establishment of footings associated with coal conveyor and transfer house infrastructure.

There are two known groundwater aquifers within the vicinity of the KCT site and the broader Kooragang Island area, an (upper) Fill Aquifer and a (lower) Estuarine Aquifer. Groundwater was measured at 2.75m depth (RL 3.35m) in the Fill Aquifer and at 4.5m depth (RL 1.6m) in the Estuarine Aquifer in October 1999.

The proposed fourth dump station has been designed to minimise interactions with the existing groundwater systems. The proposed construction methodology comprises diaphragm/sheet pile walls and jet grouting of the floor structure, thereby substantially reducing groundwater dewatering requirements, as follows:

- drawdown of groundwater outside the structure is expected to be insignificant and less than seasonal variations in water table level;
- the low seepage rates and drawdown will result in little disruption to the base groundwater flow rate towards the north arm of the Hunter River; similarly, it is considered that saltwater intrusion is not an issue; and
- as the drawdown external to the dump station is expected to be insignificant, subsidence is not expected to be an issue.

Based on the excavation volume of approximately 20,500m^3, the volume of pore water contained in this soil will be in the order of 4,000m^3 to 6,000m^3. One-off dewatering of the pore water from within the structure will be required, as well as some minor ongoing seepage. The soil inside the structure will be de-saturated, aerating the clay aquitard and the upper parts of the Estuarine Aquifer, which have been identified as potential acid sulphate soils (PASS). This could

possibly lead to oxidation of the PASS and generation of acidic groundwater conditions. The water will be fully contained within the sealed structure and therefore will not impact on the surrounding groundwater. The water may, however, require neutralisation prior to re-injection.

It is expected that either driven piles or continuous flight auger piles will be required to support conveyor trestles as well as other structural elements for the conveyor and transfer house footings. No dewatering would be required for installation of piles, however, in some instances the excavation for pile caps may involve intersection of shallow groundwater requiring minor sump and pump dewatering. This would be unlikely to occur under normal climatic conditions, but could occur if groundwater levels became elevated after prolonged wet weather. There is potential for disturbance of acid sulphate soils if continuous flight auger piles are used.

Once the fourth dump station has been constructed, it is expected that some minimal groundwater seepage will occur and is predicted to be in the order of approximately 3.5m^3/day. This rate is substantially reduced from the dewatering rates associated with traditional dewatering techniques. As such, the potential drawdown effects on existing groundwater systems will be insignificant and less than seasonal variations in water table level.

Specific investigations of water quality within the vicinity of the proposed fourth dump station highlighted that the existing groundwater quality exceeded a range of relevant water quality parameters, particularly in relation to a number of metals including iron, copper and zinc, and Total Polycyclic Hydrocarbons (TPH). Therefore, the water would generally not be suitable for disposal to surface water without treatment. The Environmental Assessment considered that the groundwater produced as a result of dewatering can be managed by either of the following:

- re-injection of the water into the Estuarine Aquifer, with minimal treatment; or
- on-site treatment prior to re-injection and/or re-use on site through the existing KCT water management system.

The assessment also identified that this treatment could be successfully undertaken using a mobile treatment facility.

Issues raised in submissions

Three submissions raised the following issues:

- Newcastle City Council – only minimal information was provided regarding the potential impacts associated with the new shiploader, in particular design details of the shiploader area to prevent water pollution and impacts on the estuarine environment;
- Newcastle Port Corporation – requires precautionary measures to prevent water pollution in the Port by oil, oily substances, and other noxious substances, and for any discharge activities to be within permissible parameters;
- NSW Office of Water – construction of the project will require a licence under Part 5 of the *Water Act 1912* for groundwater interception and management. Temporary dewatering works shall not be used for the discharge of polluted water into a river otherwise than in accordance with the conditions of a licence granted under the *POEO Act 1997.*

Consideration

The Proponent has determined that the construction methodology for the proposed fourth dump station, comprising the use of diaphragm walls with a jet grouted floor, is adequate to avoid impacts which could otherwise occur with conventional dewatering. Drawdown of the surrounding aquifers and associated issues such as desaturation of groundwater dependent ecosystems, extensive disturbance of acid sulphate soils, changed flow directions and salt water intrusion can be prevented by the proposed construction methodology. As the issues of drawdown, changes to groundwater flow rates and salt water intrusion are not expected to produce negative impacts, no mitigation measures have been proposed.

Notwithstanding, to ensure that potential groundwater interactions are effectively controlled and minimised, the Proponent will undertake an appropriate design, construction and validation program, including independent review of design and ongoing monitoring during construction and commissioning, for the establishment of the proposed fourth dump station and associated conveyor tunnel. The Department recommends a condition that reinforces the need for water quality monitoring to be conducted during these works. Where the monitoring indicates potential impact on the ground water system, the Proponent is required to investigate and implement treatment options for dewatering in consultation with the NSW Office of Water.

The Department considers that the Proponent's commitment to further investigate management options to be undertaken during detailed design to determine the most suitable option is appropriate, as all conveyor and transfer

infrastructure will be designed to be consistent with existing and approved KCT infrastructure.

In relation to the above submissions from agencies, the Department notes the Proponent's response that the fourth shiploader would be constructed on the previously approved fourth shipping berth (K7 which is currently being dredged). The construction and operation of this facility would have no additional estuarine impacts that that associated with the approved fourth shipping berth. It is also noted that condition 2.12 requires compliance with section 120 of the POEO Act 1997, which prohibits the pollution of waters.

The Proponent has committed to the following measures to ensure that any potential impacts on surface water and groundwater quality arising from construction and operation of the Stage 4 Project will be adequately managed:

- continue to operate the KCT water management system to capture, treat, store and re-use all water captured within the approved KCT footprint;
- design and install appropriate sediment and erosion controls during construction;
- continue to monitor the volume and quality of any overflows should they occur;
- undertake an appropriate design, construction and validation program for the establishment of the proposed fourth dump station and associated conveyor so potential groundwater interactions are minimised;
- manage dewatering through the establishment of a series of wells for re-injection of water into the groundwater system;
- undertake monitoring to verify the quality of the groundwater at the specific dump station site prior to re-injection; and
- all excavated material will be managed in accordance with the prepared Acid Sulphate Soil Management Plan.

Given the proposed continued operation of the existing KCT water management system, commitments from the Proponent, and recommended conditions, the Department is satisfied that adequate water management for both surface water and groundwater will be in place for the construction and operational phases of the Stage 4 Project. The Department considers that the Proponent has adequately considered the issues raised in submissions, in particular maintaining a water management system that meets the design requirement of a 1 in 100 year storm event or equivalent, and prevention of polluted water discharge into the Hunter River. In the unlikely case of water pollution attributable to KCT operations, the Proponent commits to contact Newcastle Port Corporation and support relevant clean up requirements. It is also noted that condition 2.12 requires compliance with section 120 of the POEO Act 1997, which prohibits the pollution of waters.

In response to NSW Office of Water, the Stage 4 Project will not increase throughput or result in additional water usage. Due to increased efficiencies in the way water is used on the KCT site, it is unlikely that water demand will increase in the future.

6.4 Traffic and Transport

Issue

Construction

Construction of the project is expected to take 2 years with construction set to peak for six months between the 10th and 15th month. An estimated 300 construction personnel will be involved during the peak period and the number will be between 100 and 150 individuals for the remainder of the construction period. Haulage of construction materials for the project is estimated to generate approximately 200 heavy vehicles (400 vehicle movements) over the two year period. This equates to an average of less than 1 heavy vehicle movement per day over the construction period.

During the peak construction period, some 240 arrival trips would be generated in the AM peak period (7am to 8 am) and 240 departure trips during the peak PM period (3.30pm to 4.30pm). It was estimated that up to 85% of the construction workforce will arrive from Newcastle (ie from Industrial Drive and then Cormorant Road), while 15% will arrive via Stockton Bridge. Construction staff will access the site at three different locations, as shown in Figure 3.

The construction traffic assessment undertaken by Stapleton Transportation and Planning Pty Ltd provides quantified details of existing traffic levels on the local transport network and the impact of Stage 4 construction on this network. The focus of assessment was on construction activities as the main impact will come from these activities when up to 300 staff on site and up to 400 heavy vehicle movements will occur.

Figure 3: Traffic Site Access

The SIDRA model was used to assess the performance of key local and regional traffic intersections in the vicinity of the KCT site with the additional construction traffic associated with Stage 4. These intersections are Industrial Drive and Cormorant Road, Cormorant Road and Teal Street, and Cormorant Road and Egret Street. The SIDRA analysis was undertaken for the year 2012 (predicted final year of construction) using the existing traffic flows and the predicted traffic growth (factored at a 1.5% annual increase) as the base line. Construction traffic associated with Stage 4 was then added to the base situation to assess the impact of this project on local network performance.

The predicted results on the operation of key intersections during peak periods as a consequence of the additional Stage 4 construction traffic are as follows:

- Industrial Drive and Cormorant Road intersection – no impact on the operation of this intersection.
- Cormorant Road and Teal Street intersection – virtually unchanged, and continues to operate at Level of Service (LoS) "B" with significant spare capacity and only moderate delays to the worst approach. The average delays to all movements represent a LoS "A";
- Cormorant Road and Egret Street – virtually unchanged, and would remain at LoS "C". The increase in delay between the existing and future test is only 4 seconds, straddling LoS "B" and LoS "C" threshold.

Parking on site for 240 car spaces is to be provided during the construction period to accommodate construction personnel.

Operation

There will be no additional traffic generated by the Stage 4 operation, and thus did not warrant an operational traffic assessment. The underside of the proposed conveyor bridge over Teal Street (above the southern approach to the Stockton Bridge) will be located approximately 8 metres above the road surface and is approximately 2.6 metres high.

Issues raised in submissions

The RTA has no objection to the proposed development but raised the following issues:

- the management of heavy vehicle movements to and from the site during construction is to be detailed in a revised Construction Traffic Management Protocol;
- the conveyor bridge structure over Teal Street is to be designed and constructed to RTA requirements;

- the developer will be required to enter into a Works Authorisation Deed with the RTA; and
- sufficient parking is to be provided on site to ensure that no vehicles are parked on the classified road network.

In relation to the elevated conveyor bridge that will pass across Teal Street, the RTA indicated the following requirements:

- the conveyor bridge structure and its approaches are to achieve a minimum of 6.5m vertical height clearance from the top of the Teal Street pavement to the underside of the bridge structure;
- maintenance activities required for the bridge structure are to be carried out from within/on the structure and impacts of such activities minimised within the road reserve; and
- obtain the RTA's agreement regarding the on-going maintenance of the bridge structure.

The Newcastle City Council requires the full details of the proposed temporary on site parking to be included in the Construction Certificate application. It also requires a Construction Traffic Management Plan to be submitted to Council for approval.

Consideration

Based on the findings of the traffic assessment, the Department considers that construction traffic associated with Stage 4 would not have a significant impact on the local road network in terms of traffic flows and performance at key road intersections. The Department notes that the traffic modelling has adopted a conservative approach by including construction traffic from NCIG's Coal Terminal Project, which is nearing completion. Construction of Stage 4 would not begin before 2011.

The Proponent already manages traffic as part of its ongoing operations, including Stage 3 construction activities in accordance with an existing KCT Construction Traffic Management Protocol (CTMP) that operates at the site. It commits to continue its traffic management for current construction and Stage 4 activities in accordance with the protocol. In addition, it has committed to:

- revise the CTMP to account for the completion of the Tourle Street Bridge and the improved regional connectivity provided by the new bridge to Industrial Drive and Pacific Highway;
- retain the designated authority and responsibility for on site and off site heavy vehicle movements for the duration of the Stage 4 construction as outlined in the CTMP; and
- require construction personnel for the Stage 4 Project to utilise existing KCT construction parking locations.

To reflect the need for a revised CTMP, a condition is recommended requiring the revision of the Protocol to incorporate the Stage 4 project. The condition also requires that approval of the Protocol be obtained from the RTA and Newcastle City Council prior to submitting it to the Director-General.

Conditions are also recommended to:

- reflect the RTA's requirements regarding the design, construction and maintenance of the proposed conveyor bridge and its approaches over Teal Street; and
- require that all parking for construction-related vehicles associated with Stage 4 must be provided on site.

6.5 Visual Impacts

Issue

The existing visual character of Kooragang Island is dominated by industrial and port related developments and Stockton Bridge. These developments are dominant components of the visual area when viewed from surrounding areas such as Stockton.

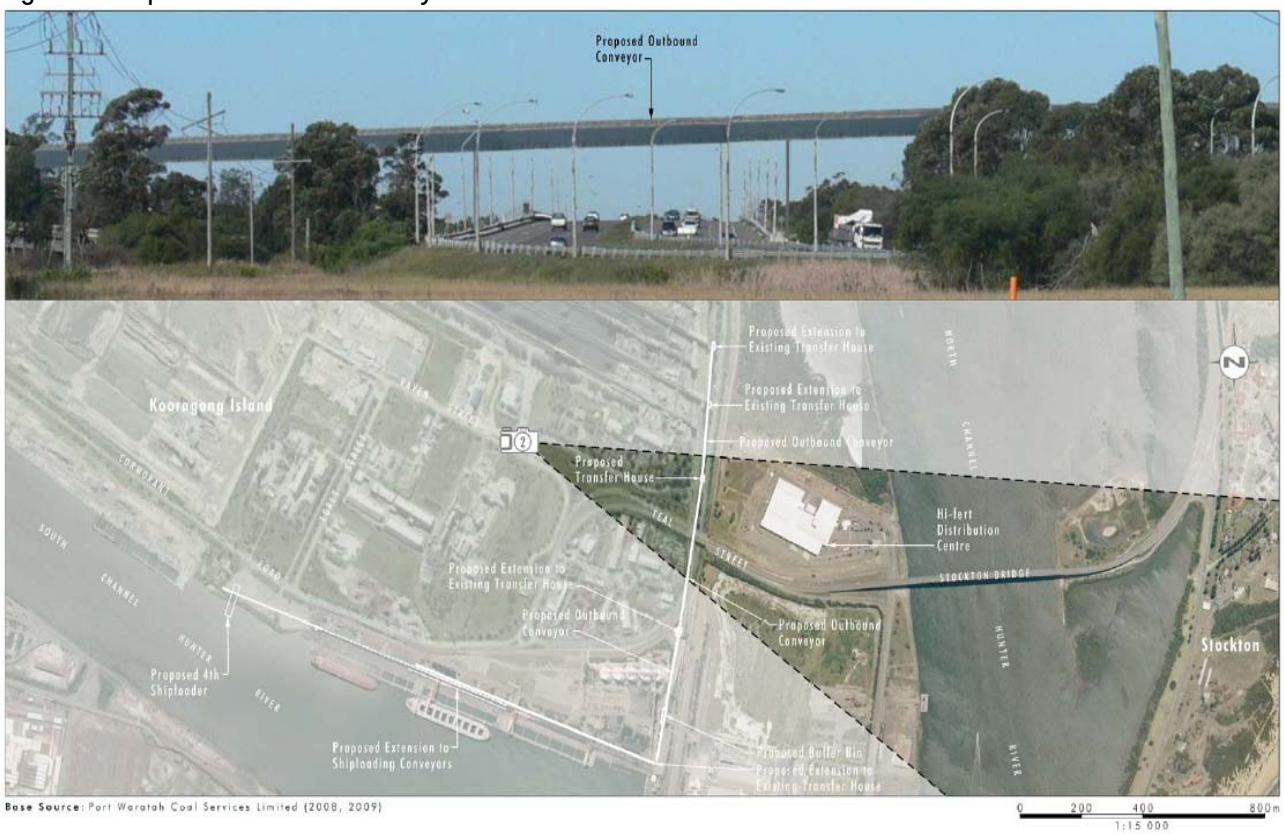
The more prominent aspects of the Stage 4 Project include the fourth ship loader, the outbound conveyor over Teal Street and the conveyor Transfer House. Other elements of the project such as the fourth dump station, some conveyors and fourth rail loop are unlikely to be visible to the public due to their location in relation to existing KCT infrastructure and surrounding land uses.

The visual assessment consisted of:

- identifying areas that were envisaged to have views of the project, and selecting representative public viewing points within each area; and
- using photomontages of the proposed infrastructure to analyse the visual impact from each viewing point.

The photomontage in Figure 4 is of the proposed conveyor bridge structure across Teal Street as viewed from Raven Street. The conveyor structure is 2.6 metres high and has a road clearance of approximately 8 metres.

Figure 4: Proposed Outbound Conveyor



Issues raised in submissions

There were no issues raised concerning the visual impact of the project.

Consideration

The five viewing points utilised for visual assessment were: Stockton Bridge, roundabout on eastern side of Stockton Bridge, Stockton, Cormorant Road and Raven Street. The visual assessment found that the proposed conveyor over Teal St has the highest potential for visual impact as will be viewed from Stockton Bridge and Raven St. The underside of the conveyor is approximately 8 metres above the road surface and the structure is approximately 2.6 metres in height. However, this will generally only be seen by passing motorists and is not expected to significantly impact on the visual amenity of the area on account of the short viewing time and the existing industrial structures of the area, including the NCIG's two built over the road conveyors across Cormorant Road.

From the viewing point at Stockton, residents have general views of the heavily industrialised environment of Kooragang Island and due to the shielding of other structures on the Island, Stockton Residents cannot specifically view the proposed project

The Department considers that the proposed infrastructure is unlikely to significantly impact on existing visual amenity as the impacts are consistent with the existing heavy industrial and port environment and would blend in with the industrial structures of the area. However, the potential exists for the structures to be visually intrusive without the right finish and colouring particularly the larger and more dominant structures such as the outbound conveyor across Teal Street, transfer house and fourth ship loader. In this respect, the Department notes the Proponent's commitments to ensure that:

- Stage 4 infrastructure to be designed and constructed to be consistent with existing PWCS infrastructure; and
- All new infrastructures shall be finished in colours that blend in with the tones of the existing adjacent industrial environment.

6.6 Other Issues

Ecology

The northern part of the KCT lies directly adjacent to the Kooragang Nature Reserve, which forms part of the Hunter Estuary Wetlands. The ecological assessment consisted of literature review of the 1996 EIS for KCT's Stage 3 Expansion, database searches (10 km radius search) of the DECCW Atlas of NSW Wildlife and DEWHA Protected Matters Database, and a site inspection conducted by a senior ecologist on 21 July 2009 of all components of the project area that are to be impacted by the project.

The 1996 ecological assessment identified the following five vegetation communities present within the KCT site and in proximity to the current Stage 4 project:

- sedgeland/rushland – community comprising rushes and sedges to two metres tall which occurs around the edges of artificial drainage depressions and ponds;
- open forest – comprising planted tree screens dominated by eucalypts (*Eucalyptus sp*), wattles (*Acacia longifolia var sophorae; Acacia saligna*) camphor laurel (*Cinnamomum camphora*) and swamp she-oak (*Casuarina glauca*);
- mangroves – grey mangrove occurring along the edge of the eater management channel inside the rail loop;
- saltmarsh – dominated by samphire (*Sarcocornia quinqueflora*) and *sueda australis* and occurring adjacent to the mangrove forest; and
- disturbed areas dominated by weed such as bitou bush (*Chrysanthemoides monolifera*).

No rare or threatened flora species were recorded during the flora surveys. However, since this EIS , coastal saltmarsh has been listed as an Endangered Ecological Community under the *Threatened Species Conservation Act 1995.*

The above 1996 assessment also recorded a total of 34 fauna species during targeted surveys undertaken in the study area, comprising 23 bird species, seven mammal species, three amphibians and one unidentified reptile (snake). The fauna surveys identified the following threatened species:

- Australasian bittern (*Botaurus poiciloptilus*);
- Eastern bentwing-bat (*Minopterus scheibersii oceanensis*); and
- Green and golden bell frog (*Litoria aurea*).

The site inspection confirmed that all project components are to undertaken within the existing disturbance footprint of the KCT or in highly disturbed industrial land surrounding the existing rail loop. No areas of native vegetation were identified in the project area.

The site inspection also confirmed that the above recorded vegetation communities and fauna habitats are the relevant communities in proximity to the Stage 4 project components. Seven bird species were also opportunistically recorded during the site inspection, none of which are threatened or endangered.

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There were no issues raised in the submissions relating to ecological impacts of the project.

The Department notes that the proposed infrastructure will be constructed on previously disturbed land, will not significantly alter the approved footprint of KCT, and will be subject to the continued implementation of the existing water management system. Consequently, the Department considers that the Project is not likely to impact on the ecological values of KCT or the adjoining Kooragang Nature Reserve.

Contamination

Newcastle City Council stated that approximately 20,000m^3 of soil will be excavated for construction of the dump station and inbound conveyor. Council recommends that additional information be provided regarding potential contamination within the excavated soil and proposed treatment and disposal methods.

The Submissions Report responded that the potential for contaminated soils is low as the area to be excavated is adjacent to the existing dump station excavation where there was no

contamination. The Department notes that the Proponent will undertake geotechnical investigation for the design of the dump station, which will include geochemical analysis of core samples. Should any areas of contamination be identified through investigations, the Proponent commits to manage all contaminated material in accordance with KCT's current procedures established under its Environmental Management System. This includes sampling and testing of potentially contaminated material to characterise the contamination and enable the classification of material in accordance with the

Waste Management Guidelines to develop the appropriate treatment and disposal options. Where potentially contaminated material is identified, it is collected and disposed of at a licensed facility, with all relevant records maintained by the Proponents in accordance with relevant requirements.

In addition, an Acid Sulphate Soil Management Plan has been prepared for the proposed construction of the fourth dump station and associated conveyor infrastructure.

Greenhouse Gas

Newcastle City Council stated that the electricity usage outlined in Tables 2.2 and 2.3 of the Greenhouse Gas Emissions Study is identical to the usage from previous reports used for approval of the 120 Mtpa Project. Council sought clarification regarding these figures as it expected higher usage due to the addition of further infrastructure as part of Stage 4.

In response, the Submissions Report indicated that the electricity consumption used as the basis of the greenhouse assessment is based on data from PWCS's existing operations. The electricity usage figure was calculated based on the existing electricity consumption per tonne of coal throughput at KCT. This figure was then extrapolated to the current approved capacity of 120 Mtpa.

The Department notes that the approach adopted for calculating power consumption on a per tonne of coal throughput basis is reflective of the integrated design and operation at KCT infrastructure. That is, all existing and approved plant does not need to be operating simultaneously to meet the overall approved throughput capacity. In the context of overall energy use, the additional infrastructure associated with Stage 4 would not result in an overall increase in electricity usage as the current approved throughput capacity would not be increased by this project.

KBF Property

Due to the proximity of the KBF Administrative Building to the Stage 4 construction activities, the Environmental Assessment identified that the KBF could experience annoyance from vibration-related piling activities. The assessment suggested that vibration monitoring and short term piling energy management may be required during piling activities to achieve compliance with the relevant annoyance risk criteria. To ensure that such activities do not have an adverse impact on the KBF property (and any other properties that may be affected), the existing Construction Environmental Management Plan would be revised and any direct physical impacts on property would need to be rectified by the Proponent.

NPC submission

In its submission, the NPC indicated support for the project, subject to compliance with a number of suggested project approval conditions. These conditions mostly relate to management of shipping movements within the Port of Newcastle, and are outside the scope of the modification request, or can be dealt with separately under the relevant legislation. Nonetheless, the Proponent indicated that it generally supports the NPC's requirements with shipping movements within the port and will continue to mange ongoing approved KCT operations in accordance with all current relevant requirements.

7. CONCLUSIONS

The Department accepts that the Stage 4 project is justified. The achievement of increased sprint capacity in KCT operations KCT will translate to improved coal handling efficiency at the terminal and to the broader Hunter Valley Coal Chain with flow on benefits to the industry and to all levels of the economy.

Although the proposed modification involves additional infrastructure to the KCT, the installation and operation of this infrastructure will be carried out mostly within the existing approved footprint and will not involve an increase to the previously approved 120 Mtpa throughput capacity.

The Proponent manages the KCT operations and ongoing construction activities associated with the previous projects in accordance with existing conditions of approval and well established environmental management practices and safeguards. The Stage 4 project will be an integrated component of the on-going KCT operations and will be subject to the existing environmental management system at the coal terminal.

The Environmental Assessment has outlined a number of environmental commitments to ensure that the Stage 4 Project would not result in any significant impacts to the surrounding environment. The Department considers that with the implementation of these commitments and compliance with existing and recommended conditions of approval, the project can be undertaken with minimal impact on the community and surrounding environment.

Following an assessment of the submitted Environmental Assessment, the submissions received and the Proponent's Submissions Report, the Department is satisfied that the impacts of the proposed project can be mitigated and/or managed to ensure an acceptable level of environmental performance. Overall, the assessment found that the addition of Stage 4 to the existing KCT operations would have minimal or marginal incremental impact and would be within current approved limits for the KCT. It is therefore recommended that the modification application be approved, subject to conditions.

APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX B – STATEMENT OF COMMITMENTS

APPENDIX C – RESPONSE TO SUBMISSIONS

APPENDIX D – ENVIRONMENTAL ASSESSMENT