

Port Waratah Coal Services

**Kooragang Coal Terminal –
Proposed Increase to Throughput
Capacity
Response to Submissions Part A**

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Kooragang Coal Terminal Proposed Increase to Throughput Capacity Response to Submissions Part A

Prepared by

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on behalf of

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1.0 Introduction

This document has been prepared in response to a request from the Director-General in accordance with section 75H(6) of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) that Port Waratah Coal Services Limited (PWCS) prepare a response to the issues raised during the public exhibition period for the Kooragang Coal Terminal Proposed Increase to Throughput Capacity Project (Project). This report outlines Part A of PWCS' Response to Submissions and focuses on the issues raised by government agencies including Department of Environment and Conservation (DEC) and Newcastle Port Corporation (NPC), and Newcastle City Council (NCC). A submission was also received from NSW Maritime Authority which raised no specific issues in relation to the Project.

A further response will be prepared in relation to the issues raised by the community during the public exhibition period for the Project.

Issues raised by government agencies are addressed in each section. For each primary issue, the theme of the matters raised is noted in bold, followed by a response in normal type.

2.0 Department of Environment and Conservation (DEC)

2.1 Air Quality

DEC stated that:

- it is satisfied that the proposal can operate within the relevant air quality impact assessment criteria;
- the air quality assessment in the environmental assessment (EA) was carried out in accordance with the relevant procedures;
- the project alone has a small impact in increasing PM₁₀ levels in the area;
- the cumulative impact assessment with the proposed Newcastle Coal Infrastructure Group (NCIG) Export Coal Terminal is adequate; and
- should both projects be approved, the combined impact of the two projects operating concurrently will not cause adverse air quality impacts under normal operating conditions.

The focus of the DEC submission in relation to air quality is monitoring to adequately identify and manage potential cumulative impacts. These matters are addressed below.

DEC recommends PWCS and NCIG (subject to approvals) establish a joint reliable and more cost-effective, comprehensive, real-time and ambient dust monitoring system.

DEC considers it appropriate that the dust monitoring network include between two and four real-time dust monitoring stations. Establishing a network of real-time dust monitoring stations is recommended as real time monitoring data provides an effective decision making tool to manage dust emissions by changing, in real time, the operation of equipment and/or the dust control systems.

PWCS will assess a potential agreement with NCIG for the establishment of a joint air quality monitoring program pending the approval of the proposed Newcastle Coal Export Terminal. Notwithstanding the outcomes of the determination of the proposed NCIG project, PWCS has committed to the continuation of the current air quality monitoring program (refer to Section 7.0 (p7.3) of the EA).

The recommendation for the use of real time dust monitors will not yield any likely improvement for the management of dust emissions associated with KCT operations. As outlined in Section 6.3.2.5 (p6.20) of the EA, a large array of dust controls and safeguards are currently in place to ensure that emissions are controlled and that air quality outside KCT is not adversely affected by the operation. The introduction of improved technology of coal handling associated with the Project will further strengthen the dust controls. This includes the introduction 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 carryback dust.

The current and proposed dust management controls are based on the principle of source control through effective equipment design that does not allow dust to be entrained in the air stream, dust suppression systems that control dust lift off and sealing of roadways and open areas to control traffic generated dust.

An integral part of the safeguards is the continuing implementation of a specific air quality monitoring program (refer to Section 2.3.2 (p2.3) of the EA). The program was designed in consultation with the DEC and NCC and the location of existing monitoring sites is shown on Figure 2.4 of the EA. 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.

As noted in Section 2.3.2 (p2.3) of the EA PWCS currently operate a meteorological station located adjacent to the KCT administration building, which includes monitoring of wind speed and direction. The meteorological station provides for the automated control of dust suppression sprays within stockyard area during times of dust enhancing weather conditions which includes inputs of wind speed, wind direction, relative humidity, rainfall and evaporation.

The comprehensive air quality assessment undertaken as part of the EA (refer to Section 6.3.2 (p6.15) and Appendix 5 of the EA) demonstrates that the existing proactive dust management equipment and system of controlling dust emissions from KCT operations is effectively controlling dust. Further the modelling of dust impacts associated with the Project demonstrated there would not be a significant increase in air quality impacts within surrounding residential areas and will remain within relevant air quality criteria. As noted above, this conclusion of the comprehensive air quality assessment was specifically acknowledged on the DEC submission.

It is considered that the management of dust impacts associated with ongoing KCT operations are likely to significantly deteriorate by the use of real time monitors which necessitate a reactive dust management response after the dust is mobilised in the air stream. The current proactive approach focuses on source controls before the dust is mobilised into the air. Consequently, the existing air quality management program is a more effective approach to the management of dust emissions associated with the Project.

As a minimum requirement, four hi-volume samplers, four dust deposition gauges and a meteorological station capable of monitoring wind speed and wind direction. At least two of the hi-volume samplers should be used for PM₁₀ monitoring. Existing licensed monitoring locations should be reviewed in this context.

The current air quality monitoring network consists of three High Volume Air Samplers (HVAS), including one directional PM₁₀ sampler at Fern Bay, and an array of 12 depositional dust gauges as shown on Figure 2.4 of the EA (refer to Section 2.3.4 (p2.4) of the EA). The focus of the air quality monitoring program is to monitor compliance with air quality standards in the nearby residential areas of Fern Bay and North Stockton. In addition, the monitoring program provides for a microscopic analysis of dust samples collected from the boundary of the KCT site and surrounding residential areas to determine the proportions of coal particles in those samples.

As outlined above the current air quality monitoring program was designed in consultation with the DEC and NCC as part of the Stage 3 expansion.

In addition, PWCS operates an automatic weather station at the KCT site to monitor a range of meteorological conditions including wind speed and direction, rainfall and evaporation rates. As outlined in Section 2.3.2 (p2.3) of the EA, the weather station is linked directly to the stockyard dust suppression system to ensure dust control measures are activated during periods of less favourable weather conditions.

In response to DEC's comments, PWCS propose that adding an additional PM₁₀ HVAS at Stockton and maintaining the existing licensed dust deposition gauges in surrounding residential areas is an appropriate network for future monitoring.

2.2 Noise

DEC raised a number of issues relating to the detailed noise assessment approach and these have been addressed by Heggies Pty Ltd in the following response.

DEC is satisfied that the proponent has identified potentially most affected noise sensitive receivers at the residential areas of Stockton, Fern Bay, Mayfield West, Mayfield, Carrington and Sandgate.

DEC does not accept the proponent's view that the noise monitoring results from Mayfield West are representative of conditions at Warabrook.

A review of the Heggies supplementary report library demonstrates that noise monitoring to establish background levels and industrial noise at 5 Decora Crescent, Warabrook (W5) was carried out in relation to the Protech Steel Coal Mill Facility (HLA 2001). W5 is located toward to the southern end of Decora Crescent where traffic noise was noted as the major contributing noise source.

The measurement methodology is described in HLA Envirosiences Pty Ltd Noise Impact Assessment - Protech Steel dated 7 August 2001 and the noise data processed in accordance with the requirements of the INP to derive the background levels shown in **Table 1**. The Noise Impact Assessment (NIA) background levels proposed for assessment purposes at the Warabrook/Mayfield West Receiver Area (based on the monitoring results from W1 and W2) are also presented for comparison in **Table 1** with the supplementary Warabrook (W5) measurement results.

**Table 1 - Comparison of W1-W2 KCT NIA 2006 and W5 Warabrook 2001
(dBA re 20 µPa)**

Receiver Area	ID (Ref)	Measured RBL All Noise Sources			Measured L _{Aeq(period)} All Noise Sources			Estimated L _{Aeq(period)} Industrial Noise Only		
		Day	Evening	Night	Day	Evening	Night	Day	Evening	Night
Warabrook/ Mayfield West Residential	W1-W2 ¹	45	46	41	61	56	55	<54	45	43
	W5 ²	45	46	44	56	54	53	<54 ³	<44 ³	<39 ³

Note 1: KCT Noise Impact Assessment October 2006 background noise for assessment purposes.

Note 2: Supplementary background and industrial noise Proposed Protech Steel Cold Mill Facility.

Note 3: Assumed amenity levels based on reduced exposure to the adjoining industrial and commercial areas of Mayfield, Steel River and Sandgate.

The following comparisons can be made between the NIA background levels (W1-W2) and the supplementary Warabrook (W5) measurements results:

- The daytime and evening RBLs at NIA locations W1 and W2 and supplementary Warabrook location W5 are identical. The night-time RBL used for assessment purposes in the NIA is conservatively 3 dBA lower than the measured RBL at W5.
- The higher daytime, evening and night-time LAeq(period) levels (all noise sources) is consistent with the NIA locations W1 and W2 having relatively greater exposure to the major traffic noise sources by comparison with W5.
- Although not quantified in the supplementary report the existing industrial amenity levels at W5 are likely to be lower by comparison with W1 and W2 as exposure to the adjoining industrial and commercial areas of Mayfield West, Steel River and Sandgate is reduced by topographic relief.

It is concluded that the night-time RBL has been conservatively underestimated in the NIA for the current PWCS project. Similarly, it appears the existing industrial amenity levels may have been conservatively overestimated in the NIA as some areas in Warabrook are less exposed to the adjoining industrial area noise sources.

In view of the foregoing there is no need to amend the background and industrial noise levels proposed for assessment purposes as presented in NIA Table 9 (refer to Appendix 5 of the EA).

DEC does not accept a number of the Rating Background Levels (RBL's) with DEC nominated RBL identified in Table 1 of the DEC response.

Table 1: Rating Background Levels (RBL) and Existing Level of Industrial Noise (dB(A))

Location	RBL L _{A90}			Estimated L _{Aeq(period)} Industrial Noise		
	Day	Evening	Night	Day	Evening	Night
Fern Bay North	44	45 44	40	<49	<39	<34
Fern Bay West	47	42	40	<54	<44	40
Fern Bay East	40	43 40	40	<54	<44	39
Stockton West	42	43 42	42	<54	<44	42
Stockton East	41	42 41	42 41	<54	<44	<39
Mayfield West	45	46 45	41	<54	45	43
Mayfield	46	47 46	43	<54	45	44
Carrington/Maryville	42	41	37	<54	45	42

Reference is made to the DEC's Application Notes - NSW Industrial Noise Policy (modified July 2006) Section "When the RBL for evening or night is higher than the RBL for daytime". In the above Table 1 the DEC have applied selective adjustments to the NIA qualified RBLs and industrial amenity levels as determined in accordance with the INP. The Application Notes make no reference what-so-ever to the selective adjustments to measured noise data but rather seeks to modify project-specific noise levels in accordance with the DEC's current perception of "community expectations".

The NIA details a comprehensive background noise monitoring programme comprising of unattended logging and supplementary operator-attended noise surveys. In accordance with the INP both the RBLs and industrial amenity levels have been derived from the "long-term" noise logger data using appropriate statistical analysis procedures. Night-time industrial amenity levels have been estimated by "filtering out" extraneous traffic and localized noise sources to reveal the underlining industrial amenity level. These results have been further distilled into single representative RBLs and industrial amenity levels at each receiver area and where appropriate includes corrections to remove any noise contribution from KCT's existing operations.

It is concluded that selective adjustments to the qualified RBLs and industrial amenity levels as presented in the NIA Table 9 are inconsistent with the DEC's Application Notes. On this basis, there appears no justification for modification of the RBL's and the NIA background noise levels for assessment purposes should remain as included in the EA and shown in **Table 2** below.

Table 2 - Residential Background and Industrial Noise for Assessment (dBA re 20 uPa)

Location	Measured RBL - All Noise Sources			Estimated $L_{Aeq(periode)}$ Industrial Noise Only		
	Day	Evening	Night	Day	Evening	Night
Fern Bay North	44	45	40	<49	<39	<34
Fern Bay West	47	42	40	<54	<44	40
Fern Bay East	40	43	41	<54	<44	<39
Stockton West	42	43	42	<54	<44	42
Stockton East	41	42	42	<54	<44	<39
Warabrook/ Mayfield West	45	46	41	<54	45	43
Mayfield	46	47	43	<54	45	44
Carrington/Maryville	42	41	37	<54	45	42

DEC does not necessarily accept the proponent's Indicative Noise Amenity Area category nomination of 'Urban' for all residential receivers (except North Fern Bay). DEC is of the view that receiver locations at Fern Bay and Stockton should be categorised 'Suburban' for the following reasons:

- a) *The INP Application Notes identify Section 2.2.2 of the INP as providing guidance on the appropriate receiver type. Section 2.2.2 of the INP identifies that the primary means for identifying the type of receiver is how the area is zoned in the relevant planning instrument. DEC understands that there is an 'Urban Core' zoning in the vicinity of Mayfield, and that most receivers are not in this zone, suggesting that 'Suburban' is an appropriate category for residential areas outside the 'Urban Core' zone.*

b) **Most of the residences in the receiver areas appear to be free-standing, single occupant dwellings on the 'quarter acre blocks', whereas the INP states that "Urban receivers are usually those located in densely populated areas where multi-dwelling developments such as townhouses, units, flats and apartments are the norm".**

DEC sought the view of the Dept of Planning (DoP), as an appropriate land use planner, and was advised that receiver locations at Fern Bay and Stockton should be categorised 'Suburban' unless compelling evidence was presented that supported an alternative categorisation. DEC assessed noise impacts based on DoP's advice.

NIA Section 2.1 Receiver Areas and Appendix A2 makes reference to the INP's Section 2.2.1 "Notes to Support the Noise Level Tables" and Section 2.2.2 "Determining the Receiver Type" with respect to the definition of an "Urban" noise zone and summarized as follows:

"Urban - an area with an acoustical environment that:

- is dominated by "urban hum" or industrial source noise
- has through traffic with characteristically heavy and continuous traffic flows during peak periods
- is near commercial districts or industrial districts
- has any combination of the above"

"Urban receivers are usually those located in densely populated areas where multi-dwelling developments such as townhouses, units, flats and apartments are the norm."

"Areas near noise generators (for example, roads, railways and industry) would normally be considered to be urban-receiver type for the purpose of the amenity criteria."

The INP's acceptable noise amenity level for urban noise zone is 45 dBA up to a maximum 50 dBA.

NIA Appendix A2 also relates the findings of the existing noise environment (presented in NIA Section 3.2) within each receiver area and concludes that in each case all adjacent residential receiver areas (except Fern Bay North) are 'without doubt' within the definition of the "Urban" noise zone. The DEC appears to support the view that Fern Bay and Stockton meet the definition of "Suburban" noise zone and summarized as follows:

"Suburban - an area that has local traffic with characteristically intermittent traffic, flows or with some limited commerce or industry. This area often has the following characteristics:

decreasing noise levels in the evening period (1800-2200); and/or

evening ambient noise levels defined by the natural environment and infrequent human activity."

"For example, small communities such as villages or towns are likely to be closer in noise climate to a suburban category."

The INP's acceptable amenity level for suburban (and rural) zone is 40 dBA up to a maximum 45 dBA.

In view of the foregoing and based on the existing noise environment findings presented in NIA Section 3.2 the following points can be drawn in relation to Fern Bay and Stockton:

- *Existing Traffic Flows* - Fern Bay is exposed to the Nelson Bay (arterial 20,000 vehicles per day) Road and Stockton is exposed to the Fullerton (collector) Road.
- *Adjacent Land Uses* - Fern Bay and Stockton are located adjacent to Kooragang Island and Mayfield North industrial areas and separated by the Stockton Hospital.
- *Existing Noise* - There is no apparent decrease in the RBLs or industrial amenity levels between the daytime and evening periods. At Stockton West (in the absence of KCT's existing operations), the existing night-time industrial amenity levels are in excess of 40 dBA applicable to suburban noise zones during noise enhancing weather conditions.
- *Rural Amenity* – It is useful to note that the INP's acceptable amenity level for a rural noise zone is also 40 dBA. Clearly, the acceptable amenity level for Fern Bay and Stockton must be at least 5 dBA above that of a rural and suburban area.

The NIA concludes that Fern Bay and Stockton are not small villages or towns but rather urban residential areas adjoining the Port of Newcastle visually and acoustically exposed to existing industrial areas and associated transportation networks (operating 24 hour per day, 7 days per week). It is likely that the historical association between the community and the industrial nature of these localities remains.

The DEC has recently published Application Notes – NSW INP and the relevant section as modified in July 2006 is as follows:

“Identifying the appropriate receiver amenity category

(see INP Section 2.2.2)

Amenity criteria in Table 2.1 of the INP vary depending on the type of receiver. INP Section 2.2.2 provides guidance on identifying the appropriate receiver type. Where there is doubt or debate over which receiver category is appropriate, the proponent needs to seek the views of the relevant land use manager (for example, Council or Department of Planning). Once the land use manager has identified the land use (eg: zone, allowable density of development and land use patterns), the appropriate amenity criteria can be assigned.”

The Stockton receiver area lies within the Newcastle local government area and the Fern Bay receiver area lies within the Port Stephens local government area. We note that the Newcastle Council's submission does not query NIA's selection and use of urban noise zone for Stockton. A review of the zoning and allowable density of development from the respective published guidelines are summarized as follows:

- *Fern Bay Zoning* – Residential 2(a) under the Port Stephens LEP 2003 permits one and two storey dwellings and dual occupancy as well as townhouses, flats and units up to two storeys together with small-scale commercial activities and community uses.

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- *Stockton Zoning* - Residential 2(a) under the Newcastle LEP 2000 permits a diversity of housing forms (as evidenced by the existing density the development) as well as home-based businesses and community facilities.

Furthermore, it is generally understood that the broad scale land use patterns on Kooragang Island and in the surrounding industrial, commercial and residential areas will remain unchanged for the foreseeable future. It is concluded “without doubt” that the INP’s urban noise zone is appropriate for Fern Bay and Stockton as well as all other adjacent residential receiver areas (except Fern Bay North).

DEC recommends that the Project Specific Noise Levels be modified based on the suggested RBL and categorisation of the surrounding residential receiver areas.

To determine the existing industry contributed LAeq the measurement of ambient noise levels should be undertaken in the absence of the development under consideration. Amenity noise criteria levels appropriate for Kooragang Coal Terminal premises combined existing and proposed additional throughputs need to be derived from estimating existing LAeq industrial noise, excluding noise from existing operations on the premises.

The proponent needs to provide estimates of existing LAeq industry noise, excluding noise form existing operations on the premises.

The derived night-time amenity noise criteria levels stated in the NIA, particularly that of 32dBA for Fern Bay West and Stockton West, is essentially 10dBA below existing background noise levels and if set as a contribution limit for the proposal, would result in no increase in the total noise contribution from Kooragang Coal Terminal at these locations. This indicates that the appropriate noise objective for the Kooragang Coal Terminal should be a zero increase in total noise contributions at Fern Bay and Stockton, at least, as a result of the current proposal.

In accordance with the INP and with respect to the complexity of the of the existing noise environment, the NIA represents a comprehensive noise impact assessment of both intrusive and noise amenity noise emissions from the proposed KCT.

INP’s Section 2 *Industrial Noise Criteria* states:

“The assessment procedure for industrial noise source has two components:

- *Controlling intrusive noise impacts in short term for residences.*
- *Maintaining noise level amenity for particular land uses for residences and other land uses.*

In assessing the noise impact of industrial sources, both components must be taken into account for residential receivers, but, in most cases, only one will become the limiting criterion and form the project-specific noise levels for the industrial source.”

The DEC present an alternative set of intrusive and amenity noise assessment criteria based on misunderstandings and assumptions contained in the previous issues addressed above. In particular, it appears the DEC has overlooked NIA Section 3.2 Background Noise in the Absence of the KCT for Assessment Purposes, including NIA Table 9.

The comprehensive intrusive and amenity criteria nominated for the purposes of assessing noise impacts from the proposed KCT are presented in NIA Table 9 and represented in

Table 3 below. The criteria have been prepared in accordance with INP's Chapter 2 Industrial Noise Criteria in conjunction with the INP's Application Notes (modified July 2006). The criteria are nominated for the purposes of assessing noise impacts from the overall KCT operation inclusive of the proposed increase to capacity Project.

Table 3 - KCT Project Specific Noise Assessment Criteria (dBA re 20 µPa)

Receiver Area	ID Location	Intrusive LAeq(15minute)			Amenity LAeq(period)		
		Day	Evening	Night	Day	Evening	Night
Fern Bay North	Suburban Residential	49	47	45	55	45	40
Fern Bay West	Urban Residential	52	47	45	60	50	43
Fern Bay East		45	45	45	60	50	45
Stockton West		47	47	47	60	50	42
Stockton East		46	46	46	60	50	45
Warabrook/ Mayfield West	Urban Residential	50	50	46	60	48	41
Mayfield		51	51	48	60	48	39
Carrington/ Maryville		47	46	42	60	48	43
Mayfield West	All Steel River	Intrusive noise not applicable			65	65	65
Kooragang Island	All Industrial	Intrusive noise not applicable			70	70	70
Mayfield North	All Industrial	Intrusive noise not applicable			70	70	70
Any	School	Intrusive noise not applicable			External 45 when in use		
Any	Hospital	Intrusive noise not applicable			External 50 when in use		

Note 1: Daytime 0700 hours to 1800 hours, Evening 1800 hours to 2200 hours, Night-time 2200 hours to 0700 hours.

Note 2: The noise criteria apply under meteorological conditions relevant to the project site of:

- Wind velocity up to 3 m/s at 10 metres above ground level; or
- Temperature gradients up to 3°C/100 metres and wind velocities up to 2 m/s at 10 metres above ground level
- Where the wind velocity and temperature gradients are determined to be relevant to the project site in accordance with the NSW INP.

DEC accepts that noise associated with construction is best managed by restriction to appropriate hours such a 7am and 6pm, seven days a week. These hours are slightly different to those suggested in the Noise Control Guidelines Construction Site Noise (formerly published as Chapter 171 of the Environmental Noise Control Manual). However, DEC accepts the proposed construction hours, based on the proponent's prediction that noise levels resulting from construction are likely to be indiscernible at nearest residential receivers.

In order to clarify this issue, the NIA demonstrated that the noise levels resulting from construction are likely to be indiscernible at nearest residential receivers. As such PWCS seeks approval to carry out construction works seven days a week with noise limits as per the existing Stage 3 Consent Condition 3 being:

During the construction phase of the proposal the Applicant shall ensure that the following noise criteria are met at residential boundaries under neutral weather conditions:

- For those components of the development where the construction period is less than 4 weeks - L10 level measured over a period of not less than 15 minutes when the construction site is in operation must not exceed the background level by more than 20 dB(A).

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- For those components of the development where the construction period is greater than 4 weeks but less than 26 weeks - L10 level measured over a period of not less than 15 minutes when the construction site is in operation must not exceed the background level by more than 10 dB(A).
 - For those components of the development where the construction period is greater than 26 weeks - L10 level measured over a period of not less than 15 minutes when the construction site is in operation must not exceed the background level by more than 5 dB(A).

Worst case noise predictions for night time period exceeds the recommended acceptable noise level for night time taken from INP.

In this part of the submission, DEC present another set of amenity assessment criteria, again based on misunderstandings and assumptions contained in the abovementioned issues.

The DEC's suggestion that a "...licence would not be recommended..." for an existing operation and proposed Project, is not consistent with the INP's impact assessment and approvals processes and community standards, particularly considering:

- Most people are unlikely to notice any change from KCT's existing noise emissions to the currently approved operations or from the proposed Project.
- The existing low level of community concern as evidenced by only four community noise related enquires over the past five years.
- In many cases PWCS has gone well beyond Best Available Technology by promoting research, development and implementation of acoustical solutions not previously considered economically achievable.

DEC recommends that any consent issued for the project restrict the type of train that can operate on PWCS premises rail loop to class 90 locomotives, or other locomotives with an equivalent noise performance.

PWCS confirms that 90 Class Locomotives are the most common currently used locomotives on the ARTC rail loop into and out of the KCT rail receipt station. It is suggested that the most effective way to control locomotive noise is through the licence of the operator of the railway system, i.e. ARTC, this will have the added benefit of also controlling locomotive noise remote from Kooragang Island.

DEC observes that berthed ships are a significant noise source that may need to be addressed in the future. DEC suggests that any consent issued for the project include a requirement for the proponent to periodically (possibly every two years) review the viability of providing a shore-side power supply, or an equivalent feasible and reasonable strategy, to mitigate noise from berthed ships. DEC recommends such a requirement should apply for all new development applications with ship berth facilities in the Port of Newcastle.

The basis of the DEC's observation is unclear and without qualification. PWCS implements an operational noise monitoring programme in accordance with the approved Stage 3 Expansion consent conditions with the monitoring results reported quarterly. A review of noise measurements confirms that noise emissions arising from berthed ships at KCT are indiscernible at the nearest residential receiver areas of Fern Bay and Stockton and any noise impacts are therefore minimal.

Conclusion

DEC recommends that throughput capacity occurs such that no increase in noise emissions from the premises is permitted above the existing consent limit.

This recommendation is consistent with the detailed project and noise control design in that the overall objective was to have no increase in noise emissions above the existing consent limit. However, from a practical perspective, the INP requirement to conduct the assessment under prevailing weather conditions makes the existing consent limits (which are based on neutral weather conditions) redundant for future compliance monitoring. For this reason, it is strongly suggested that the noise criteria outlined in Section 7.0 of the EA should be the basis of the operational goals for the Project.

Whilst DEC has raised many detailed issues in relation to the noise assessment approach, their recommendations for conditions of approval are not inconsistent with the EA approach. These final recommendations are noted and commented on below.

DEC recommends the proponent develop and implement a Noise Management Plan that provides a timetable for implementation of feasible and reasonable mitigation measures to reduce the Kooragang Coal Terminal noise contributions at Fern Bay and Stockton under adverse meteorological conditions, as provided by the INP.

Preparation of a noise management plan is accepted, however, given that the achievable measures for further noise control must be implemented concurrent and as an integral part of the plant upgrades to achieve capacity expansion, the Schedule of Works will need to be clearly linked to plant throughput capacity. The export coal demand is variable and subject to many factors outside the control of PWCS, and therefore it would not be possible to lock in a detailed timeframe for all future upgrade works. Also, it is unacceptable to have noise levels determined by consultation with the DEC on an ongoing basis, the goals must be part of the consent conditions and as noted above, should be those committed to in the EA.

2.3 Water Management

DEC does not support the use of Hunter Water Corporation's potable water supply to supplement storm water harvesting for dust control.

DEC recommends a more detailed review of feasibility of using recycled sewage effluent be undertaken before the use of potable water is approved.

As outlined in Section 2.3.3 of the EA (p2.4) the current water management system operates to collect water from operational activities and to harvest storm water for recycling. All areas of the plant, including the wharf, capture water and channel it back to settling ponds for clarification prior to being held in storage ponds for re-use. Re-use of harvested storm water is a significant source of dust suppression water within KCT.

Potable water supplies from the Hunter Water Corporation for dust suppression are used on a supplementary basis to account for supply shortages from the reuse of storm water and wash down water harvested from the site.

As stated in Section 6.4.1 of the EA (p6.20) it is anticipated that with the proposed increased volume of coal throughput, there will be an increase in water usage. With the proposed additional 43 Mtpa of coal passing through the terminal, an estimated further 43 ML of water

per year will be required. This will take the total consumption of water from the Hunter Water Corporation for KCT to a maximum of 393 ML/year.

Additional supplies will be sought from Hunter Water Corporation whilst PWCS continues to investigate opportunities to make greater use of recycled water across the site and investigate alternate sources of water supply. Ongoing consultation with Hunter Water is currently required under the existing Stage 3 conditions of consent which state:

The Applicant shall continue discussions with Hunter Water Corporation or other appropriate bodies regarding the possible use of treated wastewater for dust suppression or other purposes on the site.

The feasibility of providing commercially viable recycled water to Kooragang Island is currently being investigated by Hunter Water Corporation, and to this end PWCS will continue to participate in discussions with Hunter Water Corporation with a view to using more recycled water, pending the outcomes of Hunter Water Corporation Kooragang Island feasibility investigations.

3.0 Newcastle City Council

3.1 Air Quality

Air quality assessment fails to include a shipping component of the transport of coal, which should be included.

The current air quality monitoring program includes the monitoring of dust emissions from all KCT operations including the loading of coal onto ships. As outlined in Section 6.3.2.2 (p6.16) of the EA the analysis of historical air quality monitoring for the 2000-2005 period indicate that dust levels, in terms of both deposition and concentration, are below relevant DEC criteria.

Further the comprehensive air quality impact assessment (refer to Section 6.3.2 (p6.15) and Appendix 5 of the EA) included the prediction of dust emissions resulting from the Project, which specifically included the contribution of loading of coal onto ships (refer to Table 6.12 (p6.18) of the EA). As concluded by the comprehensive air quality assessment all predicted air quality impacts associated with the Project will remain within relevant air quality limits. As outlined above this conclusion of the comprehensive air quality assessment was specifically acknowledged on the DEC submission

Fuel burning emissions, including emissions associated with shipping of coal to overseas ports, will be addressed in the indirect greenhouse gas assessment to be included in the Part B – Response to Submissions.

NCC recommends that the continuing dust monitoring program be included in the conditions of any consent.

As outlined in Section 7.0 of the EA (p7.3) PWCS has committed to the continuation of the of air quality monitoring in accordance with the existing Stage 3 development consent conditions and the associated dust monitoring program developed in consultation with the DEC and NCC. DEC raised specific matters in relation to the ongoing monitoring program and these are addressed in **Section 2.1** of this document.

3.2 Noise

NCC recommends noise monitoring programmes continue and be imposed as an appropriate condition on any consent, time restrictions may limit any adverse noise impacts from construction.

As outlined in Section 7.0 of the EA (p7.2) PWCS have committed to the continuation of the noise monitoring program in accordance with the Stage 3 development consent conditions and associated noise monitoring program developed in consultation with the DEC and NCC.

An assessment of construction noise impacts associated with the Project was undertaken as part of the EA (refer to Section 6.3.1.4 of the EA (p6.8)). As outlined in this section of the EA, PWCS implements a construction noise monitoring program during phases of the approved Stage 3 Expansion with the monitoring results reported quarterly. Noise monitoring undertaken during the completed Stage 3 construction phases confirms that noise emissions arising from construction activities are not discernible at the nearest residential receiver areas of Fern Bay and Stockton and any construction noise impacts are therefore minimal.

In addition, the Project does not involve the mobilisation of an appreciable workforce, with the incremental installation work being carried out as part of ongoing maintenance activities by small teams to suit access to plant and the required capacity increase. It is reasonable to anticipate intrusive $L_{A10(15\text{minute})}$ construction noise emissions will remain indiscernible at the nearest residential receiver areas and not exceed the background level by more than 5 dBA. Therefore any construction noise impacts arising from the ongoing Project installation and maintenance works are also considered minimal.

As noise levels resulting from construction are likely to be indiscernible at nearest residential receivers, PWCS seeks approval to carry out construction works seven days a week with noise limits as per existing Stage 3 Consent Condition 3 (refer to **Section 2.2** of this document).

NCC recommends continuation of the Continuous Noise Improvement Program.

PWCS has implemented an Acoustical Design, Procurement, Construction and Commissioning Process throughout the Stage 3 Expansion. This process has been exceptionally successful in reducing noise emissions from KCT to below relevant government and community criteria. The initiatives undertaken as part of this noise mitigation process (refer to Table 6.2 (p6.3) of the EA) incorporate Best Available Technology to enable PWCS to achieve compliance in relation to consented noise limits.

As outlined in Section 7.0 of the EA (p7.2) PWCS will continue to investigate and implement (where feasible) new technology and practices targeting noise reduction as part of the ongoing design, procurement, construction and commissioning process.

The assessment of operational noise should take into account sensitive land uses such as Stockton Hospital and Stockton Primary School.

The comprehensive noise assessment undertaken as part of the EA focussed on a number of surrounding areas that were considered to be the potentially most affected noise receivers. As outlined in Table 6.4 in the EA (p6.4) the potentially most affected noise receivers within the assessment included the surrounding residential areas of Fern Bay, Stockton, Warabrook/Mayfield West, Mayfield, and Carrington/Maryville. As outlined in **Section 2.1**, the DEC is satisfied that the noise assessment has identified potentially most affected noise sensitive receivers.

In addition the noise assessment (refer to Section 6.3.1.3 (p6.5) and Appendix 4 of the EA) identifies relevant noise amenity criteria applicable to sensitive land uses such as hospital and schools in the surrounding receiver areas. In accordance with the NSW INP the relevant amenity criteria include external 45dBA (when in use) for schools and external 50dBA (when in use) for hospitals.

As stated in the operating noise amenity assessment undertaken by Heggies (refer to page 32 of Appendix 4 of the EA) noise emissions from the Project at Stockton Primary School and Stockton Hospital are below the relevant DEC acceptable noise amenity criteria for day time, evening and night-time periods. Any noise impacts are therefore considered acceptable.

Furthermore, the cumulative night-time noise amenity assessment (refer to Section 6.3.1.7 (p6.11) of the EA) indicated that within Fern Bay West and Stockton West, worst case noise amenity levels are anticipated to increase by approximately 1 dBA but remain under 50 dBA applicable to Stockton Hospital.

NCC recommends that rail noise goals should be imposed as an appropriate condition on any consent.

As stated in Section 6.3.1.6 (p6.9) of the EA the Australian Rail Track Corporation (ARTC) controls and operates the Hunter Valley Coal Rail Network in NSW. Noise emissions from the railway are regulated via ARTC's Environmental Protection Licence (EPL No 3142). PWCS assumes control of incoming coal once the coal is unloaded at the coal receipt station.

Due to the operational responsibility for the Hunter Valley Coal Rail Network of ARTC it is not feasible for PWCS to implement rail noise goals as a condition of development consent for KCT. Notwithstanding this as outlined above PWCS will continue to investigate and implement (where feasible) new technology and practices targeting noise reduction on the KCT site (including rail unloading activities) as part of the ongoing design, procurement, construction and commissioning process.

In addition, based on published briefings, the following points can be made in relation to the ARTC's improvement strategy for the Main Northern Railway:

- The ARTC released an updated version of its 'Hunter Valley Capacity Improvement Strategy' in April 2006 for comment and consultation with industry, including key changes:
 - an updated timeframe with plans extending out to 2011;
 - fully revised volumes forecasts, with export volumes reaching 145 Mtpa; and
 - the total projected cost of capacity enhancements is \$375M over 5 years.
- ARTC has already engaged in the process of planning and statutory approvals for rail capacity upgrade projects. Noise impacts resulting from rail capacity upgrades will be assessed by ARTC as part of the assessment and approval of these projects.
- The upgrades referred to in the ARTC publications would be subject to a public environmental assessment process under the *Environmental Planning and Assessment Act 1979* and ultimately regulation by the DEC via an EPL.
- The environmental assessment for each phase of physical upgrade in the rail network would provide the ARTC with the opportunity to develop noise mitigation works.

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- PWCS also understand that the ARTC will develop and implement a noise abatement program as part of the planned upgrade of the Hunter Valley coal rail network.

3.3 Water Management

The usage of water will increase as a result of the stockpiling of coal materials on-site. The management of these impacted waters needs to be actively monitored and recycling options be pursued.

As outlined in **Section 2.3** a significant source of water for dust suppression on site is the re-use of water harvested from wash down water systems and storm water runoff on site, supplemented with water sourced from Hunter Water Corporation as needed. As stated, it is anticipated that with the proposed increased volume of coal throughput, there will be an increase in water usage.

Additional supplies will be sourced from Hunter Water Corporation whilst PWCS continues to investigate opportunities to make greater use of recycled water across the site and alternate sources of recycled water supply.

Due to the proximity of the site to Kooragang Nature Reserve the management of water is critical to prevent any impacts on the flora or fauna inhabiting the reserve. As discussed in Section 2.3.3 (p2.4) of the EA, the water management system at KCT is designed to capture a 1 in 100 year storm, with any discharge in extreme storm events flowing via an existing storm water channel which provides a vegetated flow path to the North Arm of the Hunter River. The location of the rail loop embankment between the storm water channel and the adjacent Kooragang Nature Reserve provides a barrier to protect the Kooragang Nature Reserve in the unlikely event that the capacity of the storm water channel is exceeded.

3.4 Ecologically Sustainable Development

EA fails to include an assessment of the proposal in terms of the principles of ESD.

To justify the proposed project with regard to the ESD principles, the benefits of the project in an environmental and socio-economic context should outweigh any negative impacts. The ESD principles encompass the following:

- the precautionary principle;
- inter-generational equity;
- conservation of biological diversity; and
- valuation and pricing of resources.

Essentially, ESD requires that current and future generations should live in an environment that is of the same or improved quality than the one that is inherited.

3.4.1.1 The Precautionary Principle

The EP&A Regulation defines the precautionary principle as:

“Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
- (ii) an assessment of the risk-weighted consequences of various options.”*

In order to achieve a level of scientific certainty in relation to potential impacts associated with the proposed modifications, the EA covers an extensive and careful evaluation of all the key components of the Project. Detailed assessment of all key issues and necessary management procedures has been conducted and is also comprehensively documented in the EA.

The existing environment has been scientifically studied and assessed (refer to Section 6.0 of the EA). In addition, engineering and scientific modelling has been utilised to assess and determine potential impacts as a result of the Project. To this end, there has been careful evaluation to avoid, where possible, irreversible damage to the environment.

The decision making process for the design, impact assessment and development of management processes has been transparent in the following respects:

1. Relevant government authorities and community representatives interested in the project were consulted during EA preparation (refer to Section 5.0 of the EA). This enabled comment and discussion regarding potential environmental impacts and proposed environmental management procedures.

As outlined in Section 5.0 of the EA, the community has been consulted through a range of communication mechanisms including individual briefing meetings with neighbouring stakeholders, community presentations, community mail and feedback sheets which provided project details in addition to an opportunity for the community to provide feedback on the project. Specific meetings were also held with key government agencies to address specific environmental issues.

2. An Annual Environmental Report is prepared for Kooragang Coal Terminal. These reports incorporate details of site environmental management, monitoring and environmental response procedures. Current environmental management and monitoring has been outlined in Section 2.3.4 (p2.4) of the EA. Section 7.0 of the EA outlines PWCS commitment to the continuation of these environmental management practices together with additional specific initiatives associated with the Project. The commitments of PWCS are clearly identified in the EA.
3. The EA has been undertaken on the basis of the best available scientific information about the project area. Where uncertainty in the data used in the assessment has been identified, a conservative worst-case analysis has been undertaken and contingency measures have been identified to manage that uncertainty. A monitoring program has also been proposed to measure predicted against actual impacts of the project (refer to

Section 7.0 of the EA), so that contingency measures, if required, can be implemented in a timely and pro-active manner.

4. An auditing and review process is an integral component of the existing environmental management at KCT, which provides for verification of project performance by independent auditors and relevant government agencies

3.4.1.2 Intergenerational Equity

The EP&A Regulation defines the Intergenerational Equity as:

“Intergenerational equity namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.”

Intergenerational equity refers to equality between generations. It requires that the needs and requirements of today's generations do not compromise the needs and requirements of future generations in terms of health, bio-diversity and productivity.

The objectives of the project are to enable the KCT facility to effectively respond to the forecasted increases in export coal production, improve the efficiency of KCT operations whilst continuing to improve environmental performance, continue to conduct KCT operations in an environmentally responsible manner and continue PWCS' significant contribution to the local, regional, state and national economies. The current environmental management measures outlined in Section 2.3.4 (p2.4) of the EA and committed to in Section 7.0 of the EA will continue to be implemented, and where possible improved, to minimise the impact on the environment to the greatest extent reasonably possible.

The management of environmental issues as outlined in the EA will maintain the health, diversity and productivity of the environment for future generations. The proposed increased to throughput capacity also makes a significant contribution to maintaining services in the community through the direct and flow on economic benefits.

3.4.1.3 Conservation of Biological Diversity

The conservation of biological diversity refers to the maintenance of species richness, ecosystem diversity and health and the links and processes between them. As stated in Section 6.4.5 (p6.22) of the EA all relevant ecology considerations were taken into account during the previous EIS process and subsequent development consent requirements for the Stage 3 Expansion. The Project does not alter the approved footprint in any way.

In addition off-site noise impacts are not predicted to increase and dust impacts are marginal. Consequently, there are no expected direct or indirect impacts on fauna habitat in the adjacent Kooragang Nature Reserve. Similarly, there is no proposed change to the current water management system which provides adequate protection from potential water quality impacts on the wetland system.

Therefore, there are no adverse aquatic, wetland or terrestrial ecology impacts associated with this Project.

3.4.1.4 Valuation and Pricing of Resources

The goal of improved valuation of natural capital has been included in Agenda 21 of Australia's Intergovernmental Agreement on the Environment. The principle of improved valuation and pricing refers to the need to determine proper values of services provided by

the natural environment. The objective is to apply economic terms and values to the elements of the natural environment. This is a difficult task largely due to the intangible comparisons that need to be drawn in order to apply the values.

The project optimises the valuation and pricing of the coal resources with minimal impact by:

- optimising the effectiveness and flexibility of KCT to respond to forecasted increases in export coal production in response to increasing international demand for coal; and
- increasing the efficiency of KCT operations to receive, handle and load export coal resources.

Project feasibility considerations have included the costs of integration of effective environmental management to minimise potential environmental impacts.

3.5 Energy and Greenhouse Gas Management

NCC recommends that an appropriate condition concerning the investigation and implementation of GHG technologies be included in any consent.

A detailed greenhouse gas and energy assessment for the Project was undertaken by SEE Sustainability (refer to Section 6.4.4 (p6.21) and Appendix 6 of the EA). The assessment addressed direct energy and greenhouse gas emissions from the Project in accordance with a number of relevant national and international assessment guidelines including *NSW Energy and Greenhouse Guidelines for Environmental Impact Assessment* (SEDA & Planning NSW 2002), *Greenhouse Gas Protocol* (WBCSD and WRI 2004), and *Factors and Methods Workbook* (Australian Greenhouse Office 2005).

As part of this assessment, it was considered the main sources of greenhouse gases from the Project are indirect emissions of carbon dioxide (CO₂) through the consumption of electricity, and small amounts of direct emissions associated with petrol and diesel use on site. The assessment concluded that annual greenhouse gas emissions from the Project dominated by electricity usage, which accounts for 99.7% of direct greenhouse gas emissions, with emissions associated with the burning of diesel and petrol on site making up the remaining 0.3% of emissions.

As a result of this assessment PWCS have committed to assessing and implementing a range of energy efficiency and greenhouse management initiatives during the Project (refer to Section 6.4.4.2 (p6.22) of the EA). PWCS will therefore review and implement, as appropriate, the following as part of ongoing operations:

- energy efficiency in plant and equipment procurement – consideration to be given to the life cycle cost advantages obtained by using energy efficient components;
- the opportunity to install additional sub metering for offices, workshops, conveyors, stackers and reclaimers;
- operational initiatives such as turning off idle plant and equipment;
- control and temperature settings for air conditioning units in offices and switchrooms;
- automatic control of lighting;

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- potential energy efficiency opportunities in water pumping and dust suppression systems, e.g. variable speed drive pumps; and
 - changes in power consumption with installation of new equipment and install power factor correction equipment to suit.

In addition to the assessment of direct greenhouse gas emissions, an assessment of indirect greenhouse gas emissions associated with the Project is currently being completed. The outcomes of this assessment will be reported in the Part B - Response to Submissions.

4.0 Newcastle Port Corporation

All precautionary measures to prevent the pollution of waters of the Port of Newcastle by oil, oily substances, and other noxious substances must be taken.

PWCS has established a closed water management system to meet the design requirement of a 1 in 100 year design storm event or equivalent. To enable greater water harvesting and reduce dependence on potable water, the water management system for the complete Stage 3 Expansion has already been implemented and is operational.

The water management system operates to collect water from operational activities and to harvest storm water for recycling. All areas of the plant, including the wharf, capture water and channel it back to settling ponds for clarification prior to being held in storage ponds for re-use (refer to Figure 2.2 of the EA).

The existing water management system is an effective mechanism for the prevention of pollution of waters of the Port of Newcastle.

Immediately upon becoming aware of any pollution incident or pollution activity impacting the waters of the port, the proponent shall notify Newcastle Port Corporation.

Works must be undertaken in a manner to ensure no dumping of any rubbish or disposal of any materials into the waters of the port.

The proponent shall ensure any generation of turbid water from construction activities are within permissible parameters

Any contamination of the general port area resulting from construction activities will be removed to the satisfaction of NPC.

Whilst the abovementioned matters are reasonable management requirements, we note that these NPC recommendations specifically refer to construction works. As outlined in Section 3.2 (p3.2) of the EA the Project will not involve any change to the approved footprint or approved facilities of KCT. All works involved in achieving the capacity increase are either optimised design for currently approved drives and conveyors or retrofitting these with higher capacity components. Construction activities are proposed to be undertaken in compliance with the existing development consent for the Stage 3 Expansion, on an ongoing basis in response to increased demand.

As outlined above the water management system at KCT is designed to capture all storm water runoff from the site, including the wharf area. Furthermore the requirement to prevent

the pollution of waters is an inherent aspect of the existing Environment Protection Licence and lease conditions for the use of the port related land.

The proponent shall comply with all requirements of the Commonwealth Maritime Transport and Offshore Facilities Security Act 2003 and Regulation 2003, and any security related directions or requests from NPC which may arise.

The existing KCT operations are governed by the Maritime Security Act and Regulations, and as the proposal is within the existing KCT footprint all proposed activities will be included in all current and future compliance requirements.

All vessels, dredges, barges or other floating equipment associated with the proposal shall be inspected prior to entry into the Port of Newcastle to ensure they are free from biofouling.

NPC must be consulted regarding the design, location and installation of any navigational aids.

In finalising Masters who will operate vessels within the Port of Newcastle, prior agreement shall be obtained from NPC regarding issuing of limited Certificates of Local Knowledge.

Prior to any vessel or floating equipment entry into the Port of Newcastle (8 weeks), the proponent shall prepare in consultation with NPC, a Port Operations Management Plan to the satisfaction of NPC.

Prior to commencing construction the proponent shall consult with and obtain NPC's consent to all design aspects impacting on the safe navigation of vessels, including:

- **Berth location and size;**
- **Fender arrangement;**
- **Fender line lighting;**
- **Mooring layout;**
- **Gangway landing; and**
- **Pilot ladders and/or jetties.**

As outlined in Section 3.0 of the EA the Project relates to the increase in the throughput capacity of KCT from the current approved 77 Mtpa to a nominal 120 Mtpa. The proposed increase to throughput capacity will not involve any change to the approved footprint or approved facilities of KCT. All works involved in achieving the capacity increase are either optimised design for currently approved drives and conveyors or retrofitting these with higher capacity components. It is not proposed to undertake any works associated with any vessels, dredges, barges or other floating equipment as part of the current application.

PWCS currently works with NPC on planning port operations and will continue to do so over the operational life of KCT.

The proponent shall ensure that all approvals and permits for any dangerous goods required in connection with the proposal are obtained and complied with, including obtaining relevant clearances received from NPC for any Dangerous Goods being handled in the port area.

The handling of the dangerous goods through the existing KCT operations is governed by the current port area lease agreement. As the proposal is within the existing site footprint all proposed activities will be included in all current and future compliance requirements.

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