PORT KEMBLA

Outer Harbour Development Modification

Volume 1

PORT KEMBLA OUTER HARBOUR DEVELOPMENT MODIFICATION

Environmental Assessment Document (Volume 1 of 2)

Port Kembla Operations Pty Ltd
trading as NSW Ports

March 2014

Port Kembla Outer Harbour Development Modification

Environmental Assessment

Client: Port Kembla Operations Pty Ltd trading as NSW Ports

ABN: N/A

Prepared by

AECOM Australia Pty Ltd
Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia
T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com
ABN 20 093 846 925

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Prepared by Vanessa Organo, Caitlin Bennett and Sarah Townsend

Reviewed by Andrew Cook and Catherine Brady

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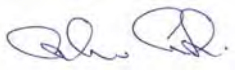
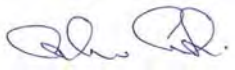
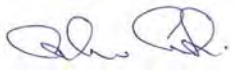
0	31-May-2013	Final for Adequacy Review	Andrew Cook Technical Director - Environment	
1	03-Jun-2013	Minor editorial corrections	Andrew Cook Technical Director - Environment	
2	28-Mar-2014	Final for public exhibition	Andrew Cook Technical Director - Environment	

Certification Statement

Author of the Environmental Assessment

Name:	Andrew Cook, Caitlin Bennett, Vanessa Organo and Sarah Townsend
Address:	Level 21, 420 George Street, Sydney, NSW, 2000
Qualifications:	Andrew Cook - Bachelor of Town and Regional Planning, Caitlin Bennett - Bachelor of Science (Environmental Biology) & Masters of Urban and Regional Planning, Vanessa Organo - International Bachelor of Science (Hons), Sarah Townsend – Masters in Environmental Law and Bachelor of Environmental Science (Hons).

Name and Address of the responsible person:

As above

Address of the land to which the modification request applies:

The land to which this environmental assessment report applies is at the Outer Harbour of Port Kembla within the Wollongong local government area as detailed in Chapter 1.

Description of the Infrastructure to which this environmental assessment applies:

This environmental assessment considers the proposed modification to the Outer Harbour Development Concept Plan and Major Project (Stage 1) to enable the development to handle an increase in the total volume of bulk cargo, from 4.25 million tonnes per annum to 16 million tonnes per annum, as detailed in Chapter 4.

Assessment of the Environmental Impact of the Modification:

An assessment of the environmental impact of the infrastructure is contained in this environmental assessment report.

Declaration:

I declare that this Environmental Assessment:

a. Has been prepared in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* and the *Environmental Planning and Assessment Regulation 2000*;

b. Contains all available information that is relevant to the environmental assessment of the development to which this environmental assessment report relates; and

c. Contains information that is neither false nor misleading.




Andrew Cook | Caitlin Bennett | Vanessa Organo | Sarah Townsend

01 November 2013

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Abbreviations

Acronym/Abbreviation	Explanation
AADT	Annual Average Daily Traffic
ABL	Assessment Background Level
AC	Alternating Current
ADT	Average Daily Traffic
AHIMS	Australian Heritage Information Management System
AMP	Alternative marine power
AN	Ammonium Nitrate
ANZECC	Australia New Zealand Environment Conservation Council
AQIA	Air Quality Impact Assessment
AQIS	Australian Quarantine Inspection Service
AQMP	Air Quality Management Plan
ARI	Average Recurrence Interval
ARTC	Australian Rail Track Corporation
AS	Australian Standard
ASS	Acid Sulfate Soil
ASSMAC	Acid Sulfate Soil Manual
ASSMP	Acid Sulfate Soil Management Plan
AWS	Automatic Weather Station
bgs	Below ground surface
BOM	Bureau of Meteorology
BTEX	Benzene, Toluene and Ethylbenzene
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CMA	Catchment Management Authority
CMP	Conservation Management Plan
CNVMP	Construction Noise and Vibration Management Plan
CO	Carbon Monoxide
CoPC	Contaminants of Potential Concern
DA	Development Application
dB	Decibels
dB(A)	A-weighted Decibel
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
DEWHA	Department of Environment, Water, Heritage and Arts

Acronym/Abbreviation	Explanation
DGRs	Director General Requirements
DGs	Dangerous Goods
DMP	Demolition Management Plan
DNR	Department of Natural Resources
DO	Dissolved Oxygen
P&I	Planning and Infrastructure
DPI	Department of Primary Industries
DREMP	Environmental Management Plan
DWT	Dead Weight Tonnes
EA	Environmental Assessment
ECP	Electronically Controlled Pneumatic
ECRTN	Environmental Criteria for Road Traffic Noise
EEC	Endangered Ecological Community
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPL	Environmental Protection Licence
ERP	Emergency Response Plan
ESD	Ecological Sustainable Development
GGBF	Green and Golden Bell Frog
GGBFMP	Green and Golden Bell Frog Management Plan
GRP	Gross Regional Product
GSP	Gross State Product
HIPAPs	Hazardous Industry Planning Advisory Papers
HSMP	Hazardous Substance Management Plan
HVAS	High Volume Air Sampler
Hz	Hertz
ICBs	Intermediate Bulk Containers
ICNG	Interim Construction Noise Guidelines
ICOLL	Intermittently Closed or Open Lake or Lagoon
IGANRIP	Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects
Infrastructure NSW	Stage Infrastructure Strategy (2012-2032)
INP	Industrial Noise Policy
ISC	Industrial Source Complex

Acronym/Abbreviation	Explanation
ISQGs	Interim Sediment Quality Guidelines
km/h	Kilometers Per Hour
KMA	Kevin Mills and Associates
L_{A1}	Levels exceeded for 1 per cent of the sample
L_{A10}	Levels exceeded for 10 per cent of the sample
L_{A90}	Levels exceeded for 90 per cent of the sample
L_{Aeq}	Equivalent sound level
L_{Amax}	The maximum sound pressure level measured over the measurement period
LEP	Wollongong Local Environmental Plan 2009
LGA	Local Government Area
LMP	Landscape Management Plan
m^3	Meters cubed
MFN	Metropolitan Freight Network
mg/kg	Milligrams per kilogram
mg/L	Milligrams per Litre
mm/s	Millimetres per second
Mtpa	Million Tonnes Per Annum
NADG	National Assessment Guidelines for Dredging
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measures
NES	National Environmental Significance
NML	Noise Management Levels
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_x	Oxides of nitrogen
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NSW Fisheries	Department of Primary Industries (Fisheries)
NVMP	Noise and Vibration Management Plan
OCP	Organochlorine pesticides
O-D Survey	Origin-Destination Survey
OEH	Office of Environment and Heritage
OEMP	Operational Environmental Management Plan
OHS	Occupational Health and Safety
ONVMP	Operational Noise and Vibration Management Plan
PAH	Polycyclic Aromatic Hydrocarbon
PASS	Potential Acid Sulfate Soils

Acronym/Abbreviation	Explanation
PC	Piston Core
PCB	Polychlorinated Biphenyls
PHA	Preliminary Hazard Analysis
PIANC	Permanent International Association Navigation Congress
PKHD	Port Kembla Harbour Development
PKOH	Port Kembla Outer Harbour
PKOPL	Port Kembla Operations Pty Ltd
PKPC	Port Kembla Port Corporation
PM_{10}	Particulate matter less than or equal to 10 micrometres (µm)
$PM_{2.5}$	Particulate matter less than or equal to 2.5 micrometres (µm)
POEO	Protection of the Environment Operations Act
Ports SEPP	State Environmental Planning Policy (Port Botany and Port Kembla) 2013
PPE	Personal Protective Equipment
PPV	Peak Particle Velocity
QHHERA	Qualitative Human Health and Ecological Risk Assessment
RBL	Rating Background Level
RMP	Refuelling Management Plan
RMS	Roads and Maritime Services (formerly RTA)
RNP	Road Noise Policy
RTA	Roads and Traffic Authority (now RMS)
SAC	Site Assessment Criteria
SCA	Sensitive Catchment Area
SEPP	State Environmental Planning Policy
SEPP33	State Environmental Planning Policy No.33, Hazardous and Offensive Developments
SEPP71	State Environmental Planning Policy No 71 – Coastal Protection
SFMP	Safety Management Plan
SG	Sediment Grab
SILs	Soil Investigation Levels
SMP	Site Management Plan
SO_2	Sulphur Dixoide
SoC	Statement of Commitments
SPMP	Spoil Management Plan
STMP	Stormwater Management Plan

Acronym/Abbreviation	Explanation
SWMP	Soil and Water Management Plan
TAL	Tonne Axle Loads
TBT	Tributyltin
TCE	Trichloroethene
TEUs	Twenty-foot equivalent units
TfNSW	Transport for New South Wales
the CGM	Cement Australia Grinding Mill
TIA	Traffic Impact Assessment
TMP	Traffic Management Plan
TPHs	Total Petroleum Hydrocarbons
TSC Act	Threatened Species Conservation Act 1995
TSP	Total Suspended Particulate
µg/L	Micrograms per litre
µg/m3	Micrograms per meter cubed
µM	Micrometres
UNSW	University of New South Wales
US-EPA	United States – Environmental Protection Agency
VC	Vibro Core
VCR	Volume Capacity Ratio
VENM	Virgin Excavated Natural Materials
VMS	Variable Message Signs
WHO	World Health Organisation
WMP	Waste Management Plan
WQMP	Water Quality Management Plan
WSUD	Water Sensitive Urban Design

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Executive Summary

Introduction

Port Kembla Operations Pty Ltd (PKOPL), as Trustee for the Port Kembla Unit Trust and a subsidiary of Port Kembla Port Corporation (PKPC) operates the port of Port Kembla (the Port), located in the Illawarra region on the east coast of New South Wales (NSW). PKPC is a State-owned corporation under the *State Owned Corporations Act 1989*. As of the 1 June 2013, PKOPL will be wholly-owned by NSW Ports (the private port manager). For simplicity and for the purposes of this report the reference to PKPC is also taken to be PKOPL.

In 2011, PKPC was granted approval for the Outer Harbour Development, comprising the expansion of port-side and landside facilities in the Outer Harbour of the Port. Due to growing customer demand and a shift in the strategic role of the Port, PKOPL on behalf of PKPC now seeks to modify its approval to accommodate an increase in the bulk throughput handled at Port Kembla. Previously approved road, rail and shipping operations and associated infrastructure designs would require modification to support the expected increase in bulk trade.

This Environmental Assessment provides an outline of the proposed modification and an assessment of the potential associated environmental impacts. It also contains mitigation measures that would be implemented during construction and operation to minimise potential impacts.

Existing Approvals

In March 2011, the Minister for Planning granted approval under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for the Concept Plan and Major Project for the Outer Harbour Development.

The Concept Plan comprised the vision for the long-term master plan for the construction and operation of the Outer Harbour Development over a 30 year timeframe. This included the development of multi-purpose and container terminals for a total of seven berths, associated dredging and reclamation works and development of associated road and rail infrastructure.

The Major Project approval related only to Stage 1 of the development works and included the majority of dredging and reclamation required for the project, the construction and operation of the first multi-purpose berth and a portion of the multi-purpose terminal, construction of the first container terminal berth and a portion of the new link road from Christy Drive. Stage 1 was expected to be fully operational by 2018.

The approvals have subsequently been modified primarily to include recognition of the Cement Grinding Mill (CGM) which is being developed on part of the multi-purpose terminal area in Stage 1.The initial reclamation works for part of the multi-purpose terminal have commenced and the CGM is currently under construction on part of this reclaimed land.

The Proposed Modification

The proposed modification would enable the Port to handle an increase in the total volume of bulk cargo, from 4.25 million tonnes per annum (Mtpa) to 16 Mtpa. All additional bulk cargo volumes (14 Mtpa) would be transported by rail. To facilitate the increase in bulk trade, this modification includes:

- An enlarged operational land area for the multi-purpose terminal.
- Increased number of ship movements and larger ships to cater for the increase in bulk cargo volumes.
- Minor changes to the approved dredging and land reclamation footprint between the multi-purpose and container terminals to cater for larger ships.
- Introduction of covered conveyors and enclosed storage sheds to handle the movement of bulk product.
- Increased train movements to facilitate delivery of larger volumes of bulk cargo and associated rail infrastructure to facilitate these increased movements.
- Changes to road infrastructure to accommodate the increase in train movements, including assessment of options for the treatment of the railway level crossing on Old Port Road.
- An increase in the volume of fill material temporarily stockpiled on site for land reclamation purposes.
- A slight increase in construction traffic due to the increase in construction activity under Stage 1.
- A revised alignment of the Salty Creek extension to a more direct route through the reclamation area.

The modification would result in the more efficient use of proposed Port infrastructure, enabling Port Kembla to meet projected trade growth and customer demand. By introducing enclosed conveyors and storage sheds, the modification also presents the opportunity to mitigate the environmental impacts associated with the storage of bulk materials in open stockpiles, as previously approved.

The proposed modification would also provide additional employment associated with expanded bulk capacity of the multi-purpose terminal in Stage 1. There would also be indirect economic benefits to the Port Kembla area and broader Illawarra region arising from the additional employment that is created.

The Port Kembla port area is subject to the provisions of *State Environmental Planning Policy (Port Botany and Port Kembla) 2013*. Under this Ports SEPP, development for the purposes of c*apital dredging* and *port facilities* with a capital investment value of more than $100M does not require development consent provided the development is undertaken by the port operator.

Under the Ports SEPP the land affected by the proposed modification is located in a SP1 (Special Activities) Zone and an IN3 (Heavy Industrial) Zone. The modification is considered to be generally consistent with the relevant objectives of the SP1 and IN3 Zones.

Strategic Justification

The proposed modification responds to changes in the commercial and strategic context of the Port and takes into account changes in market demand and the State policy framework relating to ports and the movement of freight by rail which have occurred since the original approvals for the Outer Harbour Development were issued.

The *Draft NSW Freight and Ports Strategy* (Transport for NSW, 2012) confirms the role of regional ports, including Port Kembla, in exporting bulk commodities from regional NSW. It also confirms the role of Port Kembla in accommodating the State's growing container trade to augment the capacity of Port Botany when required in the future.

The Strategy also confirms the need to improve rail infrastructure to support the movement of freight by rail to service Port Kembla. This includes specific recognition of the Maldon-Dombarton Rail Link as a strategic rail freight corridor and a recommendation to further advance the investigations for this project.

Scope of the Environmental Assessment

Planning and Infrastructure (P&I) has confirmed that the modification will be assessed under Section 75W of EP&A Act. Director General Requirements (DGRs) were issued to guide the preparation of this Environmental Assessment.

In preparing the Environmental Assessment PKPC has consulted with key government environmental and transport agencies and also with the local Port Kembla community to gain a better appreciation of the relevant issues which need to be considered.

Based on the DGRs, and the consultation undertaken by PKPC, the following key issues were identified as the focus of the Environmental Assessment:

- Rail traffic
- Road traffic
- Noise and vibration
- Air quality

A range of other issues were also identified and have also been considered in the Environmental Assessment.

The Environmental Assessment is focused on assessing the environmental impacts associated with the modified elements of the Outer Harbour Development. Environmental impacts associated with elements of the approved development which are not proposed to be modified have not been included in the assessment.

Environmental Impacts – Key Issues

Rail traffic

It is estimated that the proposed increase in bulk throughput proposed as part of the proposed modification would generate up to 13 trains per day during Stage 1. These trains can be effectively accommodated at the Outer Harbour by developing local rail infrastructure including two new bulk loops, two bulk unloaders and sidings in the North and South Yards.

The modification does not propose to change the cargo volumes, train numbers and rail operations for general purpose cargo and container cargo associated with Stages 2 and 3 of the Concept Plan. As a result there is no need to revisit the previous assessment carried out for these cargo types. At full development it is estimated that the Concept Plan would generate a total of approximately 30 to 31 train movements per day.

Significant work has been carried out in relation to the options for creating additional capacity on the regional rail network servicing Port Kembla since the original approval of the Outer Harbour Development. In this Environmental Assessment, recent work carried out by the Australian Rail Track Corporation (ARTC) as part of the *Maldon-Dombarton Rail Link Feasibility Study* (Hyder and ACIL Tasman, 2011) has been revised to reflect more conservative assumptions regarding train lengths likely to be suitable for the Outer Harbour and axle loads for the rail line.

This revised analysis has provided sufficient confidence that adequate capacity can be provided on the regional rail network for this number of train movements through any one, or a combination, of the following:

- progressive upgrades to the Moss Vale to Unanderra line
- completion of the Maldon-Dombarton Rail Link
- upgrade of rolling stock to include the introduction of alternate current (AC) traction locomotives (locos) and electronically-controlled pneumatic (ECP) braking.

The relevant rail agencies including ARTC have indicated that they will work with potential customers to develop an optimal solution and, subject to satisfactory commercial arrangements, will undertake the necessary investment to ensure that the capacity is made available.

Further project approval is required for Stages 2 and 3 of the Concept Plan and detailed rail assessments will be required to support such applications in the future. In addition, the existing conditions of approval for the Concept Plan require the preparation of a Rail Master Plan in consultation with relevant rail agencies and rail operators.

Road traffic

The proposed modification would slightly increase the number of construction-related trucks from 27 trucks per hour to 35 trucks per hour. This is comparable to the number of vehicles generated by the approved operational phase of the Stage 1 development (including the CGM) and well within the approved traffic volume generated at the ultimate completion of the Concept Plan.

Based on the results of the previous traffic assessment carried out for the approved Outer Harbour Development the level of construction traffic proposed would not result in any significant traffic impacts on the existing road network. Existing management measures for construction traffic include preparation of a construction traffic management plan, designation of a primary access route for heavy vehicles and preparation of road dilapidation reports.

For both the Major Project (Stage 1) and Concept Plan operational scenarios, it is anticipated that there would be an additional eight car movements in peak hour associated with additional employees for the multi-purpose terminal as a result of the proposed modification. However, there would be no change in truck traffic as all additional bulk cargo would be transported by rail. The impacts of this additional employee traffic on the road network are expected to be minimal.

As the bulk train operations are expected to increase from four to 13 trains per day for the Major Project (Stage 1) due to the modification, Old Port Road could be blocked at the at-grade railway crossing for up to 40 minutes at a time to unload each bulk train. A preliminary assessment has determined that approximately 110 to 125 vehicles per hour on Old Port Road could potentially be diverted to Five Islands Road or the new internal port access road. If traffic was diverted to Five Islands Road the assessment indicates that the intersections and mid-block capacity on this road are expected to operate satisfactorily with this additional traffic. However, there would be potential for some local traffic to experience travel time delays as a result of the diversion.

The growth of bulk cargo throughput at the multi-purpose terminal and the associated increase in rail movements would occur progressively over time. While bulk cargo throughput volumes (and therefore train movements) at the multi-purpose terminal are low, there is potential for the effective management of road traffic impacts through the implementation of a temporary treatment option for the rail level crossing at Old Port Road.

As such, preliminary treatment options for the rail level crossing were identified and discussed with Roads and Maritime Services (RMS). Options included temporary or permanent closures of the level crossing, the diversion of traffic along Five Islands Road or the future internal port access road, and a grade separation solution.

The preferred option(s) would be selected in consultation with RMS and Transport for NSW and following consultation with directly affected businesses. The selected option would be implemented and operational prior to the commencement of bulk cargo rail movements associated with Stage 1 of the Outer Harbour Development.

Noise and vibration

Construction noise impacts associated with the Major Project (Stage 1) have been re-assessed to reflect the additional construction activities that would occur as result of the proposed modification. For example, there would be additional construction activity associated with the rail infrastructure upgrades in the North and South Yard.

Similar to the previous Environmental Assessment, it is anticipated that given their proximity to residential properties on opposite side of Five Islands Road, the proposed construction activities in the South Yard would result in exceedances of the noise management levels. These construction activities would be of a temporary nature and the Construction Noise and Vibration Management Plan would identify approaches to manage these exceedances. Measures such as temporary acoustic barriers and respite periods have been recommended for the South Yard.

A recommendation to modify the blasting condition associated with dredging activities within the Major Project approval has also been identified. The current wording of the condition is inappropriate and makes compliance with limits in respect of commercial/industrial premises unable to be reasonably achieved. As such, a suggested alternative has been proposed as part of this modification request.

The proposed modification would change noise contributions associated with the operations of the Major Project (Stage 1) and the Concept Plan. For example, the additional train movements, the bulk unloaders and the increased and reconfigured operational footprint under Stage 1 would increase noise levels at nearby sensitive receivers. While the use of enclosed storage sheds and conveyor systems would assist in reducing noise contributions, the assessment of the reasonable worst case scenario has found that exceedances would occur at sensitive receivers for the Major Project and Concept Plan.

Mitigation measures have been identified for the Major Project, which would reduce noise levels to within the assessment criteria, except at one location where a 2 decibel (dB) exceedance would occur. The mitigation options would be confirmed through a Noise and Vibration Operational Management Plan, and would be progressively implemented to reflect the growth in bulk cargo throughput.

For the Concept Plan, under the worst case scenario, there are predicted exceedances at a number of sensitive receivers after the mitigation. This includes an exceedance of up to 10 dB at one receiver during the night time period assuming worst case meteorological conditions.

It is important to recognise that the assessment has been undertaken based on conservative assumptions regarding the likely operations of the Concept Plan. In this context it is important to recognise that the development of the Concept Plan would occur over a 25 to 30 year timeframe and it is difficult to accurately predict what the ultimate operational scenario will be.

Further approvals are required for Stages 2 and 3 of the Concept Plan and additional assessments would need to consider noise contributions and mitigation strategies, which can feasibly reduce noise contributions from the total Outer Harbour Development. This is consistent with the approvals framework established within the Concept Plan approval, which includes the Cumulative Impact Protocol (Condition 2.29).

Air quality

Construction of the proposed modification is not anticipated to have adverse impacts. While the volume and area of the fill material stockpiles would increase, the increase is unlikely to result in exceedances of the Environment Protection Authority (EPA) assessment criteria at receivers. Dust monitoring at the existing stockpile demonstrates that current dust management measures are effective and these would continue to be used for the proposed modification. The existing air quality monitoring system would continue to monitor construction activities and mitigation and management measures would be included in the Construction Air Quality Management Plan.

The proposed modification would increase the volume of material to be dredged during construction, however, the dredged material would be quickly transferred to the reclamation area while wet and is not expected to be a source of odour. Field screening of odour would be conducted during dredging to identify any potential impacts. If necessary, mitigation and management measures would be implemented to minimise any offensive odour from dredging.

The design of the proposed modification includes a number of improvements from an air quality perspective, the most important of which is the use of enclosed storage sheds and conveyors for handling bulk materials.

The dispersion modelling results predict that operation of the Major Project alone, and when considered in a cumulative context, would result in some exceedances of the EPA assessment criterion for particulate matter (PM_{10} and $PM_{2.5}$). The results predict that only the closest receivers to the south west of the site would be impacted by concentrations of PM_{10} and $PM_{2.5}$ which exceed the criterion. No exceedance of the EPA assessment criterion for total suspended particulates (TSP), dust deposition, nitrogen dioxide (NO_2), carbon monoxide (CO) or sulphur dioxide (SO_2) is predicted to occur as a result of the Major Project.

The dispersion modelling results predict that operation of the Concept Plan alone, and when considered cumulatively, would result in a number of exceedances of the EPA assessment criterion for particulate matter (PM_{10} and $PM_{2.5,}$ TSP, and deposited dust). The main contribution of dust emissions for this scenario is from vehicle movements on internal sealed roads. As a sensitivity analysis, a lower silt loading was applied to the haul roads and this indicated that annual average dust concentrations at the majority of the sensitive receivers would be reduced to a level below the EPA assessment criterion.

Given this, PKPC has committed to obtaining site specific silt loading data for the internal roads once Stage 1 of the Major Project is operational. This site specific data would be used to inform any management measures, if required, to reduce particulate emissions from internal roads.

Dispersion modelling also predicts exceedances of the EPA assessment criterion for 1-hour NO_2 at some receivers as a result of the Concept Plan alone and when considered cumulatively. NO_2 is produced when fossil fuels are combusted in internal combustion engines (e.g. motor vehicles, locomotives, and ships). Exceedance of the criterion for 1-hour NO_2 for this scenario is primarily as a result of modelling seven ships at berth which in reality has a very low probability of occurring. By adopting a more realistic occupancy rate of four ships at berth the modelling demonstrated that there would no exceedance of the 1-hour NO_2 criterion.

No exceedance of the EPA assessment criterion for CO or SO_2 is predicted to occur as a result of the Concept Plan.

For the Concept Plan, PKPC has committed to investigating the feasibility of providing shore side power at berths and to investigating other options/technologies to reduce combustion emissions from ships, trains and trucks.

Environmental Impacts – Other Issues

A range of other environmental issues associated with the modification have been assessed as required by the DGRs. These issues include soils and groundwater, surface water quality and hydrology, harbour sediment quality, qualitative human health and ecological risk, aquatic and terrestrial ecology, coastal hydrodynamics and visual amenity.

It is considered that the scale of the likely impacts for each of these issues as a result of the modification is likely to be limited. Therefore these issues have been assessed qualitatively based largely on the findings of the previous Environmental Assessment, any recent environmental investigations carried out since then, and the detailed framework of conditions contained in the Major Project and Concept Plan approvals which are aimed at managing and mitigating impacts.

Cumulative Impacts

Cumulative impacts associated with the modified Outer Harbour Development have been considered. The main potential cumulative impact issues relate to rail traffic, road traffic, noise and air quality. The CGM is the most relevant project in a cumulative impact context given its location within part of the Stage 1 footprint of the Outer Harbour Development.

Rail traffic impacts have been assessed in the context of existing users of the local rail network and provided the proposed rail infrastructure upgrades are carried out there would be no adverse impacts on existing rail users. On the basis that identified upgrades to the regional rail network are carried out, there is adequate rail capacity to service the proposed bulk rail operations in Stage 1 and to also service existing rail users. Further rail assessments would be required for Stages 2 and 3 and a Rail Master Plan would also need to be prepared.

Operational road traffic impacts associated with the modification relate solely to additional employees and are considered to be relatively minor. Traffic limits for the Outer Harbour Development have been established under the Concept Plan approval and include an allowance for traffic generated from the CGM. These limits would need to be adjusted to reflect the minor changes associated with the modification.

The air quality and noise assessments for the modification have included an assessment of background contributions from surrounding industry as well as emissions from the modified Outer Harbour Development. Both assessments have included analysis of a worst case operational scenario for the Major Project (Stage 1) and Concept Plan.

In both cases the assessments have noted some exceedances of relevant cumulative air quality criteria and noise limits at the closest residential receivers and have suggested a range of management and mitigation measures to address them.

The existing approvals for the Major Project and Concept Plan include an established framework of environmental monitoring and management requirements during construction and operation which includes the development of a Cumulative Impact Protocol.

In addition, further environmental assessments will need to be prepared as part of the project applications for Stages 2 and 3 and this provides a further opportunity for assessment of cumulative impacts at a later time.

Mitigation and Management Measures

The existing approval conditions for the Major Project and Concept Plan provide a detailed framework for the management of potential environmental impacts associated with the proposed modification during both the construction and operational phases. This includes requirements relating to:

- the need for further assessment of specific issues in some instances such as a soil and groundwater contamination investigation, a Rail Master Plan and a Green and Golden Bell Frog Master Plan
- creation of limits in respect to specific issues such as traffic, noise and vibration
- establishment of monitoring programs for key environmental issues such as air quality, odour, noise, water quality, turbidity and aquatic biology
- preparation of detailed environmental management plans during the construction and operational phases
- tracking and reporting of compliance.

Where appropriate, the Environmental Assessment has identified proposed changes to approval conditions to address the impacts associated with the modification.

The existing Statement of Commitments (SoC) for the approved Major Project and Concept Plan have also been updated to address the potential environmental impacts associated with the proposed modification.

The existing Concept Plan approval requires further environmental assessments to be prepared as part of the project applications for Stages 2 and 3. This requirement provides a further opportunity for detailed assessment of environmental impacts and development of specific management and mitigation measures for Stages 2 and 3 at an appropriate time.

Residual Risk

The residual environmental risk for the proposed modification was assessed qualitatively, based on an assessment of the significance of the environmental impacts and the ability to confidently manage and mitigate those impacts to minimise harm to the environment.

The residual environmental risk analysis indicates that the proposed modification presents an overall low to medium risk to the surrounding environment and receivers in relation to each of the identified environmental issues. This assumes that the recommended mitigation and management measures are implemented.

1.0 Introduction

1.1 Background

The port of Port Kembla (the Port) is located in the Illawarra region on the east coast of New South Wales (NSW). Since 1995, the Port has been operated by Port Kembla Port Corporation (PKPC), a State-owned corporation under the *State Owned Corporations Act 1989*. On 1 January 2013, a new subsidiary of PKPC known as Port Kembla Operations Pty Ltd as Trustee for the Port Kembla Unit Trust (PKOPL) was established under the *Ports Assets (Authorised Transactions) Act 2012*. Responsibility for management and development of port lands and assets, including compliance with existing development approvals, was transferred to PKOPL upon its establishment. Therefore, for simplicity, and for the purposes of this report (and associated appendices), any reference to PKPC is taken to mean PKOPL, for the purposes of any responsibilities arising or actions undertaken since 1 January 2013.

PKOPL was established as an operating company to be sold as part of a transaction to refinance the Port. On 1 June 2013, the NSW Government completed the Port transaction with a consortium of private institutional investors known as NSW Ports, such that PKOPL became a subsidiary of NSW Ports and holds a 99-year lease over Port lands and assets, including the Outer Harbour Development site. PKOPL trades under the name NSW Ports and continue to have responsibility as the Private Port Operator for management and development of Port lands and assets.

In 2011, PKPC was granted approval for the Outer Harbour Development, comprising the expansion of port-side and landside facilities in the Outer Harbour of the Port. Due to growing customer demand and a shift in the strategic role of the Port, as detailed in **Chapter 5.0**, PKOPL, on behalf of PKPC, now seeks to modify its approval to accommodate an increase in the bulk and break bulk throughput handled at Port Kembla. Previously approved road, rail and shipping operations and associated infrastructure designs would require modification, to support the expected increase in bulk, break bulk and liquid bulk trade at the Port.

This Environmental Assessment has been prepared by AECOM on behalf of PKOPL. It provides an outline of the proposed modification and an assessment of the potential environmental impacts associated with the modification. It also contains mitigation measures that would be implemented during construction and operation to minimise potential impacts. This Environmental Assessment does not assess the environmental impacts associated with the approved Outer Harbour Development where there are no changes proposed to this development.

1.2 Previous Approvals and Modifications

In March 2011, PKPC obtained Concept Plan approval for the long-term master plan for the Outer Harbour, and Major Project approval for Stage 1 of the development works under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2.1 Concept Plan

The Concept Plan outlines the progressive development of the Outer Harbour over a 30 year period, to be constructed in a series of three stages. As currently approved, the Outer Harbour Development would comprise dredging and reclamation for the creation of multi-purpose and container terminals within the Outer Harbour which would receive Panamax size vessels. The multi-purpose terminal would consist of three berths for the import and export of dry bulk and general cargo up to 6.25 Mtpa. The container terminal would consist of four berths with a throughput of up to 1.2 million twenty-foot equivalent units (TEUs) per annum.

The Concept Plan includes construction and operation of infrastructure associated with the Port development, including land-side terminal facilities, upgrades to the existing freight rail link to the Outer Harbour and construction of a new road link from Christy Drive to Foreshore Road.

1.2.2 Major Project

The Major Project encompasses construction and operation of Stage 1 of the Concept Plan from 2010 to 2018. The key elements of Stage 1 include dredging and reclamation for the footprint of the total development (except the northern area of the multi-purpose terminal), construction and operation of one new multi-purpose terminal berth and construction of the first container berth. Associated infrastructure upgrades contained in the Major

Project approval include rail infrastructure improvements in the South Yard and the construction of a portion of the new road link from Christy Drive.

Major Project approval for Stages 2 and 3 of the Concept Plan would be subject to separate applications for approval at a later date.

1.2.3 Modification – Cement Australia Grinding Mill

In September 2011, approval was granted by the Planning Assessment Commission for a Cement Australia Grinding Mill (the CGM) to be located on the western side of the central portion of the multi-purpose terminal. The approval was granted via modifications to the Concept Plan and Major Project approvals. The primary change to the plans was an increase of the previously approved road traffic cap, to accommodate traffic generated by the CGM. The CGM is currently under construction on land initially reclaimed as part of Stage 1 construction works.

Further detail regarding the existing approvals and modifications is provided in **Chapter 3.0**.

1.3 Current Status of the Outer Harbour Development

Construction of Stage 1 of the Outer Harbour Development commenced in 2012. This construction is ongoing and includes the following elements:

- Initial reclamation of seven hectares of the central portion of the multi-purpose terminal operational area.
- Commencement of construction of the CGM on the initial reclamation area.
- Access roads to service the multi-purpose terminal and CGM designed for construction in 2013/2014.
- Stockpiling of material for the purposes of future reclamation works.
- Detailed design for the first multi-purpose berth and associated dredging and reclamation.

1.4 Proposed Modification

The proposed modification would enable the Port to handle an increase in the total volume of bulk cargo, from 4.25 Mtpa to 16 Mtpa. All additional bulk cargo volumes would be transported by rail. To facilitate the increase in bulk trade, this modification includes:

- An enlarged operational land area for the multi-purpose terminal to support the increase in bulk cargo volumes.
- Increased number of ship movements to cater for greater bulk volumes and more efficient movement of cargo.
- Minor changes to the dredging and land reclamation footprint between the multi-purpose and container terminals to cater for the larger Cape-size vessels and Super Post-Panamax vessels.
- Covered conveyors and construction of storage sheds to enable the movement of bulk product between trains, trucks and terminals.
- Increased train movements to facilitate delivery of larger volumes of bulk cargo, resulting in an additional nine trains per day accessing the Port (totalling 13 bulk trains per day).
- Additional rail and supporting infrastructure to facilitate increased train movements, including two bulk loops, two bulk unloaders and sidings.
- Changes to road infrastructure in the vicinity of the Outer Harbour to accommodate increased train movements, including the potential road closure, diversion or overbridge at the railway level crossing on Old Port Road.
- An increase in the volume of material temporarily stockpiled for land reclamation purposes at the Outer Harbour from 100,000 cubic metres to 360,000 cubic metres across two sites.
- A slight increase in construction traffic due to the increase in construction activity under Stage 1.
- A revised alignment of the Salty Creek extension to a more direct route.

These proposed modifications and associated changes are detailed further in **Chapter 4.0.**

The modification would result in the more efficient use of proposed Port infrastructure, enabling Port Kembla to meet projected trade growth and customer demand. By introducing enclosed conveyors and storage sheds, the modification also presents the opportunity to mitigate the environmental impacts associated with the storage of bulk materials in open stockpiles, as previously approved. Additionally, the increase in bulk trade at Port Kembla would lead to economic and employment opportunities in the Illawarra region and NSW as a whole. The justifications for the modification are outlined further in **Chapter 5.0**.

In December 2012, PKPC received Director General's Requirements (DGRs) relating to the proposed modification (refer to **Appendix A**). At this time, advice was also provided by Planning and Infrastructure (P&I) that the modification would be assessed pursuant to Section 75W of the EP&A Act.

The purpose of this report is to support PKOPL request for modification to existing Concept Plan and Major Project approvals for the Outer Harbour Development. It has been structured to address the DGRs relating to the modification and to assess potential environmental impacts to an appropriate extent. Mitigation measures have been developed to minimise environmental impacts resulting from the proposed modification.

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