Sydney Autostrad Terminal

Port Botany

Patrick HSE Management System

Operational Environmental Management Plan

Courtesty of NSW Ports

Plan No. SAT_HSE_PLN_11_01_v06
Date Issued: 17 January 2025

DOCUMENT CONTROL

Document control shall be in accordance with Patrick's corporate **PAT_HSE_PRO_14_001 Documents & Records Management Procedure**, ensuring:

- The Operational Environmental Management Plan (OEMP or Operational EMP) is maintained and up to date;
- The current version of the OEMP is readily available to managers, employees, and key stakeholders; and
- A copy of the OEMP is retained for a minimum of seven years.

Listed below are at least the four most recent issues for this document.

Document History

Ver. No.	Page No.	Issue Date	Description of Amendment(s)	Prepared By	Approved By
1	All	7-Jun-19	Final revision reissued to DPIE.	Marie Gibbs	Bruce Guy
2	Section 6.12	5-Jul-19	Updated with further details related to unpacking (opening) a container.	Marie Gibbs	Bruce Guy
3	All	4-Jul-22	Updated AutoRail, Traffic Management Plan, Port Botany Terminal to Sydney AutoStrad Terminal, Operation EMP to Operational EMP (as per the whole lease agreement), roles and content, procedure numbers, etc.	Marie Gibbs, Sam Steel	Bruce Guy
4	All	17-Mar-23	Updated diesel refuelling bay position including new puraceptor. Formatting, update Traffic Management Plan (TMP).	Sam Steel	Bruce Guy
5	Sections 3 & 6.7	22-Sep-23	Updated Terminal Site Details and TMP following relocation of the Truck Grids and 600m AutoRail.	Nathan Beves	Bruce Guy
6	All	17-Jan-25	Reviewed OEMP, updated section 4.3, section 6.7.	Marie Gibbs, Natalie Cerda	Bruce Guy

A person using Patrick's documents or data accepts the risk of:

- Using the documents or data in electronic form without requesting and checking them for accuracy against the original hard copy version; and
- Using the documents or data for any purpose not agreed to in writing by Patrick.

Table of Contents

Continued next page

Acronyms and Glossary

Term	Definition
ABF	Australian Border Force
AEMR	Annual Environmental Management Report
AOIMP	Aviation Operational Impact Management Plan
AQMP	Air Quality Management Plan
ARI	Average Recurrence Interval
ARMG	Automated Rail Mounted Gantry
AutoStrad	Automated Straddle Carrier – a mobile plant remotely controlled
Auto Yard or Automated Yard	Fenced off area where containers are stored during transit. Only Auto Strads and containers occupy this area. When access is required the AutoStrads are noded out.
AutoRail	Automated Rail Gantry Cranes, traverser
BC	Bayside Council (formerly Botany Bay City Council)
BHMP	Bird Hazard Management Plan
BIRP	Biosecurity Incident Response Procedure
CCC	Community Consultation Committee
CLM	Contaminated Land Management
Council	Bayside City Council comprises of Botany and Rockdale Councils. Further references to the former Botany and Randwick Councils remain throughout.
CoA	Conditions of Approval – obligations imposed on an activity assessed under Part 5 of the Environmental Planning & Assessment Act 1979
Condition of consent	Obligations imposed on a development assessed under Part 4 of the Environmental Planning & Assessment Act 1979
Cth	Commonwealth
DA	Development Application
DAWR	Department of Agriculture and Water Resources
Development Consents	DA 494-11-2003-i; and DA 453-12-2002-i
DG	Dangerous Goods
DGHCSMP	Dangerous Goods and Hazardous Chemicals / Substances Management Plan
DPE now DPIE	Department of Planning and Environment (NSW) – refer to DPIE
DPIE	Department of Planning, Industry and Environment (NSW)
DPM	Diesel Particulate Matter
DPW	DP World
EIS	Environmental Impact Statement
EMS	Environmental Management System
EMP	Environmental Management Plans
EMPCR	Environmental Management Plan Compliance Report
Environmental Aspect	Element of an organisation's activities, products or services that can interact with the environment
Environmental Impact	A change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's activities, products or services

Term	Definition
Environmental Management System (MS)	Part of an organisation's overall MS includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing & maintaining the environment policy.
EPA	Environment Protection Authority (NSW)
EP&A Act	Environment Planning and Assessment Act 1979 (NSW)
EPL	Environment Protection Licence
EPBC	Environment Protection and Biodiversity Conservation Act 1999
ERMP	Energy and Resources Management Plan
ERP	Emergency Response Plan
FA&BMP	Feral Animal & Biosecurity Management Plan
FPOE	First Port of Entry
GPC	Green Ports Checklist
HAZMAT	Hazardous Materials
HSE	Health, Safety & Environment
HSE Manager	Health, Safety, Environment, Training & Security Manager
HSEMS	Health, Safety & Environment Management System
Hutchison Ports	Sydney International Container Terminal (SICTL)
IMDG	International Maritime Dangerous Goods (Code)
INC	Incident
ISA	Intermediate Stacking Area
LEP	Local Environmental Plan
LMS	Learning Management System
MOD	Modification (ensure using the most current MOD)
MSIC	Maritime Security Identification Card
NEPM	National Environmental Protection Measures
NMCR	Noise Monitoring and Compliance Report
NOW	NSW Office of Water
NPI	National Pollution Inventory
NPWS	NSW National Parks & Wildlife Service
OCR	Optical Character Recognition
OEH	Office of Environment and Heritage (NSW)
OEMP	Operational Environmental Mgt Plan - A site/project specific plan developed to ensure appropriate environmental mgt practices are followed for the operation of a project
ONMP	Operational Noise Management Plan
OOG	Out of Gauge
Open a container	Refer to the definition for "Unpacking a container"
OTMP	Operational Traffic Management Plan
Patrick Consent	DA-453-12-2002-i (current MOD) – Port Botany Redevelopment Project
PB	Port Botany
PBCCC	Port Botany Community Consultative Committee

Term	Definition
PBE	Port Botany Expansion
PBROG	Port Botany Rail Optimisation Group F
PBRP	Port Botany Redevelopment Project
PBRT	Port Botany Road Taskforce
PBT	Port Botany Terminal now known as Sydney AutoStrad Terminal
Penrhyn Road	Formerly the length of boundary between Patrick and Penrhyn Estuary prior to DA-494 and DA-453 completion.
PEHEP	Penryhn Estuary Habitat Enhancement Plan
PIRMP	Pollution Incident Response Management Plan
POEO Act	Protection of the Environment Operations Act 1997 (NSW)
Port Botany Consent	DA-494-11-2003i (current MOD)– Port Botany Expansion Project (NSW Ports)
PRO	Procedure
Quay Crane (ship to shore crane)	Purpose built crane mounted on wharf rails. Used to load or unload containers from vessels onto the wharf or in the back reach of the crane into the Automated Yard.
RCC	Randwick City Council
Reach Stacker	Mobile plant used to pick up and carry containers with a telescopic arm/spreader, used to handle OOG cargo
RMS	Roads and Maritime Service
SAT	Sydney AutoStrad Terminal *(also known as Port Botany Terminal)*
SACL	Sydney Airport Corporation Limited
Secretary	Prior to DA 494 MOD 16 the DPE referred to this position/office as Director-General.
SEPP (Three Ports)	State Environmental Planning Policy
SICTL	Sydney International Container Terminal Limited (Hutchison Ports)
SMP	Sustainability Management Plan
SOP	Standard Operating Procedure
SPARCS	Systematic Planning and Real time Control System
SPC	Sydney Ports Corporation
Spreader	Used on quay cranes, straddles, ARMGs or reach stackers which enables the mobile plant to lift, lock on to and carry containers safely to a location.
SQID	Stormwater Quality Improvement Device
SWMP	Stormwater Management Plan
SWMS	Safe Work Method Statements
TEU	Twenty-foot Equivalent Unit – the acceptable measure of container through-put and equal to 1x 20-foot (6.1m) long container i.e. 1x 40-foot container is equal to 2 TEU.
TOS	Terminal Operating System
TSS	Total Suspended Solids
Unpacking a container	A container is opened, i.e. doors opened, cargo removed/fallen out of an over height container, livestock is moved from a container to a transport vehicle etc
VMP	Vegetation Management Plan
WQMCR	Water Quality Monitoring and Compliance Report
WWMP	Waste and Wastewater Management Plan

1. INTRODUCTION

Patrick Terminals' vision is to be an industry leader in the provision of critical logistics services within essential infrastructure-based supply chains. To achieve this vision, Patrick Terminals (i.e., four shipping container terminals based in Sydney, Brisbane, Melbourne, and Fremantle) is committed to conducting its business activities in a way that minimises adverse impacts on the environment and community, meets relevant legal requirements, and delivers improvement in environmental performance.

Patrick's largest international shipping container terminal is based at Port Botany (PB) on NSW Ports land at Brotherson Dock. This Operational Environmental Management Plan (OEMP) for the Sydney AutoStrad Terminal (formerly the Port Botany Terminal) (SAT or Terminal) outlines the level of environmental management required to ensure that activities undertaken at the Terminal are conducted in accordance with applicable legal requirements and other obligations. This OEMP forms part of SAT's Health, Safety and Environmental Management System (HSEMS) and references to applicable procedures throughout.

1.1 Scope

This OEMP applies to all facilities and infrastructure within the Patrick Sydney AutoStrad Terminal land boundaries (lease area) as identified in **Figure 3.2.1**.

1.2 Purpose

The purpose of this OEMP is to fulfil Patrick's legal and other obligations and to prevent and minimise the Terminal's operational impact on the environment. The OEMP has been prepared to document management measures for the Terminal which have been developed following a risk-based approach. The OEMP has been prepared to assist Patrick management in the implementation of these controls to mitigate potential environmental impacts that may be associated with terminal operations.

1.3 OEMP Structure and Environmental Issues Overview

The actual and potential environmental issues relevant to the Terminal have been identified. Targeted management of these issues by the OEMP and its management plans provides for a closed-loop management and reporting process. This OEMP and its management plans address:

Table: 1.3.1: OEMP Layout and Management Plans - SAT

OEMP – Sections 1 to 5	
Introduction (Section 1)	Implementation and Operation (Section 4)
Planning (Section 2)	Review and Improvement (Section 5)
Terminal (Site) Details (Section 3)	---
OEMP Management Plans – Section 6	
Air Quality (6.1)	Aviation Operational Impacts (6.8)
Stormwater (6.2)	Bird hazard (6.9)
Feral Animals (6.3)	Vegetation and Land (6.10)
Waste and Wastewater (6.4)	Energy and Resources (6.11)
DG and Hazardous Chemicals/Substances (6.5)	Biosecurity and Customs (unpack containers) (6.12)
Operational Noise (6.6)	Sustainability (6.13)
Operational Traffic (6.7)	---

2. PLANNING

2.1 Corporate Objectives and Targets

Detailed objectives and targets, including Corporate Objectives and Targets have been documented in the Patrick HSEMS **PAT_HSE_PRO_02_001 - Planning Objectives & Targets Procedure**.

2.2 Operational Environmental Aspects and Impacts / Risk Assessment

The environmental aspects, impacts and control measures associated with Patrick's operations at the Sydney AutoStrad Terminal at Port Botany have been identified and assessed in an Environmental Risk Assessment.

The risk assessment process identifies and ranks the potential environmental impact of activities conducted at the site and the risk evaluation process determines the level of treatment or control to be implemented. The Risk Assessment is conducted in accordance with the Patrick HSEMS **PAT_HSE_PRO_04_001 - Risk Management Procedure** and aligns with the environmental aspects, impacts and control measures documented in this OEMP.

The significant operational environmental aspects (risks) identified at the Terminal are as follows:

- Storage of oil and use in mobile plant and equipment,
- Inbound vessels with leaking hazardous containers aboard,
- Storage of fuel and refuelling operations,
- Storage of Dangerous Goods, and Hazardous Chemicals and Substances,
- Noise generated by Terminal operations,
- Washing of plant and equipment; and
- Hazardous waste management.

2.3 Legislative Framework

2.3.1 State and Commonwealth Legal Requirements

Patrick's activities at the Sydney AutoStrad Terminal must comply with relevant Commonwealth, State and NSW Ports environmental legislative and other requirements. **Table 2.3.1** outlines some of the key legal requirements and other obligations that are applicable to Patrick's activities undertaken at SAT:

Table: 2.3.1: Legal and Other Requirements - SAT

#	Title	Key Requirements
A	**Commonwealth Laws**	
A.1	*Australian Dangerous Goods Code 7th Edition 2017*	Sets out the requirements for transporting dangerous goods by road or rail.
A.2	*Customs Act 1901*	Regulates the unpacking of goods in containers at a cargo terminal – a cargo handler (terminal) must not allow the container (includes import, export, trans-shipment, flat rack, over height etc) to be unpacked (i.e., opened or the contents removed, emptied, fallen out etc) without written approval of an authorised officer (i.e., Australian Border Force).
A.3	*Environment Protection and Biodiversity Conservation Act 1999* and *Regulations 2000*	Sets out the assessment and approval process for sites that have or are world or national heritage listed, Ramsar Wetlands, threatened species or ecological communities, migratory species, commonwealth marine areas and nuclear sites.
A.4	*National Greenhouse and Energy Reporting Act 2007* and *Regulations 2008*	Describes the requirements for companies to report on energy use and emission of greenhouse gases. Patrick is obligated to report on energy consumption or greenhouse gas emissions.
B	**National Codes of Practice**	
B.1	National Code of Practice for the Storage and Handling of Workplace Dangerous Goods [NOHSC: 2017 (2001)]	Requirements for the storage and handling of dangerous goods and references applicable Australian Standards, e.g., AS 1940-2017 The storage and handling of flammable and combustible liquids.
B.2	National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC: 2007 (1994)]	Provides practical guidance and advice on how to comply with the National Standard for the Control of Workplace Hazardous Substances.
C	**NSW Legislation**	
C.1	*Contaminated Land Management Act 1997*	The Contaminated Land Management (CLM) Act regulates the investigation and remediation of contaminated land and the various instruments the NSW Environmental Protection Authority (EPA) can use to investigate and order the remediation of contamination land. Section 60 imposes a duty on a person who has conducted activities on land that have resulted in contamination to inform the EPA. This duty also applies to the owner of land. Patrick has a duty to inform the EPA of any contamination resulting from activities at their sites.

C	NSW Legislation - *continued*	
C.2	*Dangerous Goods (Road and Rail Transport) Act 2008*	This Act aims to regulate the transport of dangerous goods by road and rail in order to promote public safety and protect property and the environment. It is an offence to use, drive or permit a driver to transport dangerous goods if they or the vehicle are not licensed and are required to be licensed under the *Dangerous Goods (Road and Rail Transport) Regulation 2014*.
C.3	*Environmentally Hazardous Chemicals Act 1985*	The primary legislation for specifically regulating environmentally hazardous chemicals throughout their life cycle.
C.4	*Environmental Planning and Assessment Act 1979 (EP&A Act)*	Patrick operates under two consents for State Significant Development under the EP&A Act. (Refer to **Section 2.3.2, Conditions of Approval** of this OEMP.)
C.5	*National Environment Protection Council (NSW) Act 1985*	Provides for the establishment of a National Environment Protection Council that has power to make national environment protection measures. The NSW Government will implement national environment protection measures (NEPMs) in NSW in a variety of ways, including via legislation. • NEPMs implemented using EPA legislation include those relating to: • monitoring of ambient air quality, • assessment of site contamination, • used packaging materials, • movement of controlled waste; and • national pollutant inventory.
C.6	*Protection of the Environment Operations Act 1997 (POEO Act)*	This Act is the key environmental regulatory instrument in NSW and describes requirements for air, noise, water, waste and land pollution. The POEO Act aims to prevent pollution but also provides a two-tiered system to regulate pollution. The EPA is responsible for regulating higher environmental risk activities listed in Schedule 1 by licensing, while local authorities and other public authorities regulate the lower risk non-scheduled activities. Chapter 5 classifies offences into three tiers for water, air, noise and land pollution including waste and litter disposal. Patrick conduct scheduled activities at the Port Botany Terminal and are therefore required to maintain an Environment Protection Licence. Section 148 provides details of the general duty to notify the EPA or the local Council of environmental incidents. This duty applies to any incidents occurring on Patrick land where 'material harm' to the environment is caused or threatened.

3	**NSW Legislation** – *continued*	
C.7	*Protection of the Environment Operations (Waste) Regulation 2014*	The main parts of the Waste Regulation relevant to Patrick activities include: • Proximity Principle: Offence for transport of waste; • Prescribed wastes for land pollution offence; and • Reduced licensing thresholds for waste activities. Patrick has a duty to ensure wastes are disposed of appropriately and records maintained.
C.8	*State Environmental Planning Policy (SEPP) (Three Ports) 2013*	The Three Ports SEPP commenced on 31 May 2013 and includes the Patrick Port Botany Terminal (also applies to Port Kembla and Port of Newcastle). Part 2 establishes land use zones and permitted and prohibited development within these zones. Zones are categorised as follows: • Zone IN1 General Industrial; • Zone IN3 Heavy Industrial; • Zone SP1 Special Activities; & • Zone RE1 Public Recreation. Part 3 defines exempt and complying development and Part 4 State Significant Development.
C.9	*Sydney Water Act 1994*	This Act is applicable to the discharge of wastewater to sewer from industrial/commercial premises. Trade wastewater from industrial/commercial premises must not be discharged into a work owned by the Sydney Water Corporation except with the written agreement of the corporation (Section 49) commonly known as a Trade Waste Agreement or Permit. Patrick currently holds a Trade Waste Agreement for the Sydney AutoStrad Terminal which outline site specific conditions regarding trade waste discharge and pre-treatment equipment.
C.10	*Waste Avoidance and Resource Recovery Act 2001*	This Act promotes waste avoidance and resource recovery by developing waste avoidance and resource recovery strategies and programs, such as the extended producer responsibility scheme for industry. This Act allows the development and implementation of state-wide waste reduction strategies (Parts 3 and 4) and extended producer responsibility schemes (Section 15). Patrick may choose to follow the following waste hierarchy: • Avoidance of unnecessary resource consumption; then • Resource recovery (including reuse, reprocessing, recycling and energy recovery); and then • Disposal.

D	Local Government Legislation	
D.1	*Botany Local Environment Plan 2013*	The Port Botany precinct is located within the Bayside Council (BC) (formerly City of Botany Bay) and Randwick City Council (RCC) local government areas. The BC has prepared a Local Environmental Plan (LEP) under the NSW *Environmental Planning and Assessment Act 1979*, and is a key tool used by Council to implement planning policies and directions. The Botany LEP 2013 however, does not apply to land affected by the provisions of the *State Environmental Planning Policy (Three Ports) 2013* which commenced on 31 May 2013 and includes the Patrick Port Botany Terminal. Given the BCs role in administering legislation adjacent to the Terminal, it is important to maintain communication and consult with the BC as required by the Consent of Approval (CoA).

2.3.2 Conditions of Approval

The Terminal currently operates under two instruments of development consent as identified in **Table 2.3.2**. The development of The Knuckle (i.e., Berth 6) and Ramp D was completed in accordance with a development consent issued as part of the Port Botany Expansion. The Patrick Terminal redevelopment was completed under a separate development consent specific to the Patrick Terminal.

Table 2.3.2 – Instruments of Development Consent

Instrument of Development Consent	Scope
DA 494-11-2003i (latest MOD) Port Botany Expansion Project (Port Botany Consent) Applicant – NSW Ports (formerly Sydney Ports Corporation)	• Ramp D • The Knuckle (Patrick Berth 6) • SICTL (Hutchison Ports) - outside scope of Patrick operations
DA 453-12-2002-i (latest MOD) Port Botany Redevelopment Project (Patrick Consent) Applicant – Patrick (formerly Patrick Stevedores)	• Existing terminal operations • Terminal works (construction of new maintenance workshop, control tower, administration building, services and change to AutoStrad operation)

These documents, which are referred collectively to throughout this OEMP as the CoA, set out the conditions under which the Terminal is permitted to operate and are a major influence on the content of the OEMP and its management plans. Conditions of Approval for DA 494-11-2003 and DA 453-12-2002 are presented in **Appendix A and B** of this OEMP.

More detailed Legal and other requirements with specific applications to the Terminal have been documented in Patrick HSEMS **Legal Compliance Register (PAT_HSE_REG_03_003)**, the process for which is set out in Patrick HSEMS **PAT_HSE_PRO_003_001 - Legal Compliance Procedure)**.

2.3.3 Permits, Approvals and Licencing

A number of permits, licences and approvals, issued by various government statutory organisations/authorities are required for Terminal operations as listed below:

- Port Botany Expansion DA 494-11-2003i (The Knuckle and Ramp D) (**Appendix A**),
- Port Botany Container Terminal Upgrade DA 453-12-2002-i (**Appendix B**),
- Environment Protection and Biodiversity Conservation (EPBC) Control Action Approval 2002/543 (**Appendix D**),
- Environment Protection Licence (EPL) No. 6962 (**Appendix E**),
- Consent to Discharge Industrial Trade Wastewater, No. 24990 (**Appendix F**),
- Trade Wastewater Discharge Schedule, Permit No. 40110, Grease Arrestor Pit **(Appendix G)**,
- SafeWork Diesel Storage Licence,
- Sydney Ports Corporation Green Port Checklist (2014); and
- Whole lease agreement with Port Botany Lessor Pty Ltd (NSW Ports) – Licence No. 03-09-102, 11 March 2016.

Further details of the requirements contained in the CoA and associated Statement of Commitments are provided in the Management Plans in **Section 6**. Current copies of the above consents are maintained at the Terminal and a copy of EPL No. 6962 is available on the Patrick website https://patrick.com.au/environmental-monitoring/

Patrick has specific responsibilities regarding approvals and licencing, including:

- Renewal of approvals and licences as appropriate,
- Application for new approvals and licences as appropriate,
- Monitoring legislative changes and ensuring changed requirements are accounted for in updates to management documents,
- Complying with the conditions set forth in the various approvals and licences; and
- Maintaining copies of all licences and approvals on-site at the Terminal.

2.3.4 Environmental Impact Statement Obligations and Additional Conditions

Environmental Impact Statement (EIS) obligations stemming from the environmental planning assessments for the Terminal and the Port Botany expansion are provided in **Appendix C** of this OEMP.

2.4 HSE Policy

This OEMP has been developed in accordance with the commitment in the Patrick HSE Policy which includes the Terminal's environmental risks, defines minimum performance requirements as well as ensuring that relevant regulatory requirements and obligations are met.

The HSE Policy is documented in the Patrick HSEMS **PAT_HSE_POL_01_001 - Health Safety & Environment Policy**.

2.5 HSE Framework

Patrick's HSE framework is based on the company's HSE Policy. The principles of this framework are set out below:

- Comply with statutory and regulatory obligations and pursue continual improvement,
- Implement and maintain the HSEMS consistent with the Patrick 15 HSE Management Standards (comprised of 21 elements),
- Implement strategies to, improve resource efficiency and minimise negative impacts to the environment and communities in which we operate,
- Ensure workplace hazards and risks are systematically identified and controlled,
- Ensure that adequate resources are made available for the implementation and ongoing operation of the HSEMS,
- Provide necessary training for managers and employees to carry out their duties safely and without risks to people, property, and the environment,
- Establish measurable objectives, targets and review processes that are consistent with the Patrick HSEMS, to foster review and improvement towards an injury, damage, and environmental incident free workplace,
- Ensure that adequate consultation with employees occurs on HSE matters which have the potential to affect them,
- Incorporate safety and environmental considerations into business decision-making processes; and
- Communicate openly with the community, regulators, customers, and other stakeholders.

This OEMP has been designed to align with *AS/NZ ISO 14001:2015 Environmental Management Systems – Requirements with guidance for use,* as well as with Patrick's HSE framework illustrated in **Figure 2.5.1** and detailed in **Table 2.5.1**.

Figure: 2.5.1: Patrick's HSE Framework

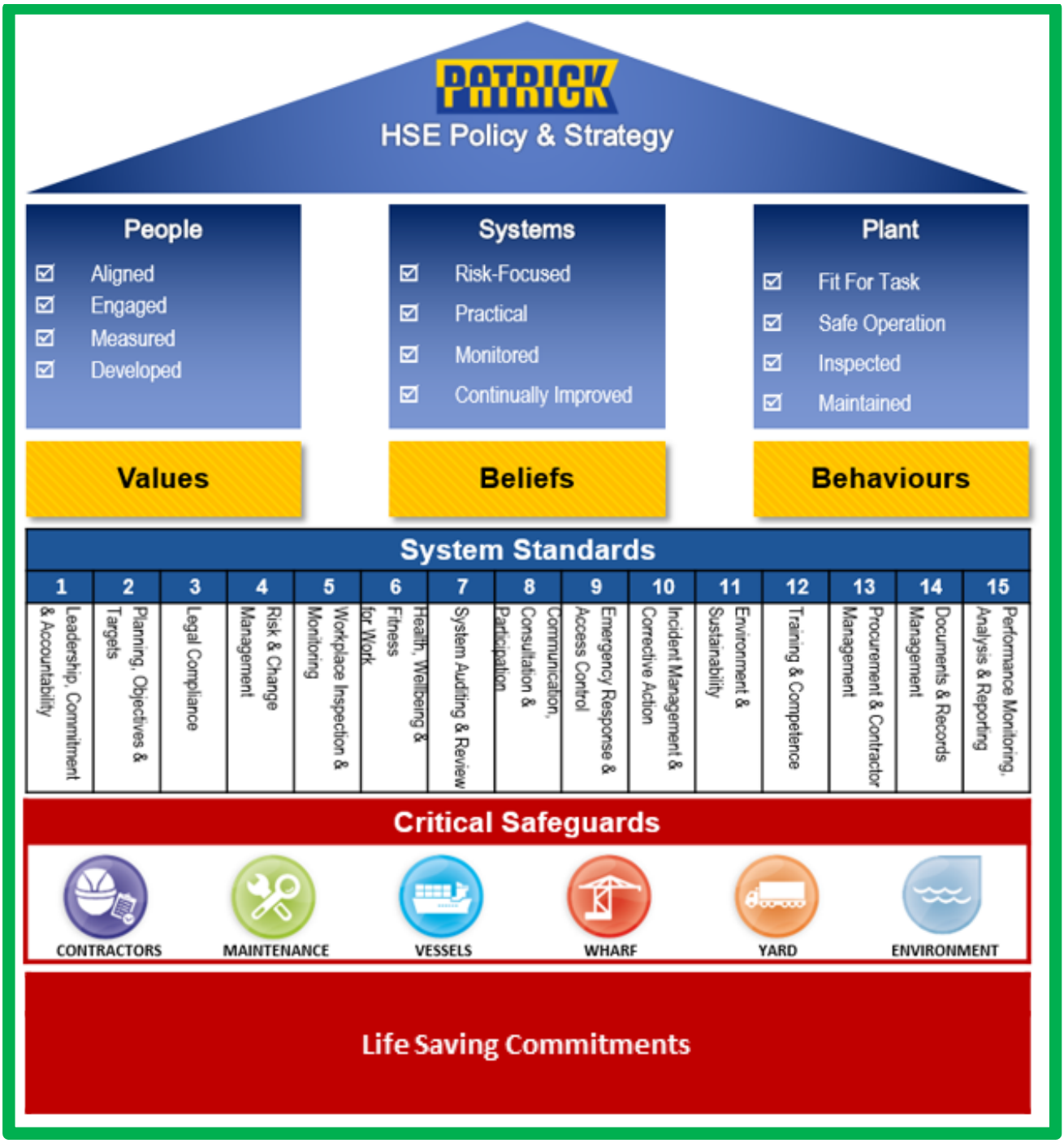


Table: 2.5.1 – The Patrick HSEMS - 15 HSE Standards comprised of 21 elements

Patrick HSEMS – 15 HSE Standards (21 elements)		
Standard No.	**Standard Title / Purpose**	**Patrick HSEMS Procedure No.**
1	**Leadership, Commitment & Accountability**	**PAT_HSE_PRO_01_001**
• Employees at all levels demonstrate a commitment to HSE through leadership actions consistent with Patrick's HSE Beliefs and Behaviours; and • Employees and management understand their responsibilities, accountabilities and authorities within the HSE Management System (HSEMS).		
2	**Planning, Objectives & Targets**	**PAT_HSE_PRO_02_001**
• A planned and systematic approach is established to fulfil the commitments of the HSE Policy; and • HSE objectives are defined and measured by setting and monitoring of targets that support the intent of the HSE Policy, and continual performance improvement.		
3	**Legal Compliance**	**PAT_HSE_PRO_03_001**
• Processes are in place to systematically identify legal and other compliance requirements; and • Compliance is achieved with legal and other requirements applicable to the activities being performed.		
4	**Risk & Change Management**	
4	**Risk Management**	**PAT_HSE_PRO_04_001**
Establish the Patrick risk management requirements; and to define the system and supporting tools.		
4	**Change Management**	**PAT_HSE_PRO_04_002**
The actual or potential impacts of proposed changes to workplace processes and equipment are assessed prior to implementation, with appropriate risk management strategies applied.		
5	**Workplace Inspection & Monitoring**	**PAT_HSE_PRO_05_001**
• Operations and activities with the potential to cause HSE harm or damage are identified, and routinely inspected to monitor the effectiveness of risk controls.		
6	**Health, Wellbeing & Fitness for Work**	
6	**Health, Wellbeing & Fitness for Work**	**PAT_HSE_PRO_06_001**
Health and hygiene management programs are consistent with legislation and industry standards and incorporate the assessment and monitoring of fitness for work where HSE risks exist.		
6	**Injury Management, Compensation & Rehabilitation**	**PAT_HSE_PRO_06_002**
Rehabilitation programs are implemented in accordance with legislation, insurer requirements and in accordance with good practice injury management principles.		
7	**System Auditing & Management Review**	**PAT_HSE_PRO_07_001**
• All operational areas, functions and work processes which may impact on HSE outcomes are audited against HSEMS requirements at specified intervals, based on risk and the results of previous audit findings; and • The HSEMS is subject to review to assess its ongoing effectiveness for achieving HSE objectives and identifying opportunities for improvement.		
8	**Communication, Consultation & Participation**	**PAT_HSE_PRO_08_001**
• Employees actively participate in the identification of HSE hazards and management of risks and are involved in making decisions about issues that may impact their health and safety. • Mechanisms are in place to facilitate open communication and consultation with employees and other affected parties regarding HSE matters that are of relevance to them.		

Patrick HSEMS – 15 HSE Standards (21 elements) *continued*		
Standard No.	**Standard Title / Purpose**	**Patrick HSEMS Procedure No.**
9	**Emergency Response & Site Access Control & Facilities**	
9	**Emergency Response**	**PAT_HSE_PRO_09_001**
Emergency response systems have been developed based on a risk management approach and are continually monitored for effectiveness.		
9	**Site Access Control & Facilities**	**PAT_HSE_PRO_09_002**
• There are adequate and suitable access controls in place to ensure HSE and business operations are not adversely affected. • Access controls have been developed based on a risk management approach and are continually monitored for effectiveness.		
10	**Incident Management & Corrective Action**	
10	**Incident Management**	**PAT_HSE_PRO_10_001**
To ensure a consistent approach to the management of incidents; the reporting, recording and classification of incidents; the internal and external notification requirements; and the incident investigation processes.		
10	**Corrective Action**	**PAT_HSE_PRO_10_002**
Corrective actions arising from incident investigations and other sources are developed, implemented, monitored and reviewed for effective risk control.		
11	**Environment & Sustainability**	**PAT_HSE_PRO_11_001**
• Patrick complies with its environmental legal requirements, including the performance standards of *AS/NZS ISO 14001: 2015 Environmental management systems.* • Patrick conducts its operations in a manner that minimises environmental and community impacts. • Patrick delivers continual improvement in environmental and sustainability management.		
12	**Training & Competence**	**PAT_HSE_PRO_12_001**
Employees and contractors are appropriately skilled, qualified and competent to undertake their work activities, and only conduct authorised tasks that they are capable of completing safely.		
13	**Procurement & Contractor Management**	
13	**Procurement**	**PAT_HSE_PRO_13_001**
HSE is a core consideration in procurement, purchasing of services, plant, equipment (including hire or lease) and materials.		
13	**Contractor Management**	**PAT_HSE_PRO_13_002**
• HSE risks associated with utilising contractors (including permanent contractors, major project contractors, labour hire personnel, service providers and consultants) are identified and controlled to an acceptable level; and • Contractors' behaviour / systems of work align with Patrick's HSE standards and monitored for conformance.		
14	**Documents & Records Management**	**PAT_HSE_PRO_14_001**
Describes the system for the review, approval, issue, and change to all Patrick documentation, and guidance on how all documents will be formatted, distributed, retained, registered, reviewed, and updated.		
15	**HSE Performance, Monitoring, Analysis & Reporting**	**PAT_HSE_PRO_15_001**
HSE performance is monitored, analysed and reported to track performance against objectives / targets, to ensure the ongoing effectiveness of hazard controls, and to provide a basis for continual improvement.		

3. TERMINAL (SITE) DETAILS

3.1 Site Location

The Sydney AutoStrad Terminal is located 12 nautical miles south of the entrance to Sydney Harbour and the Sydney Central Business District. Patrick operates a dedicated container facility on NSW Port land located on the northern side of Brotherson Dock at Port Botany.

In 2016, following the Port Botany Expansion Project, the Patrick terminal occupies a total area of 63.2 hectares, with a quay length of 1,450 metres and four berths (numbers 6, 7, 8 and 9). Road and rail access are from the north-eastern end of the Terminal, road access being via Penrhyn Road off Foreshore Road, and rail access via the Botany Freight Rail Line. The Patrick Terminal is the largest of the three container terminals at Port Botany, with two other stevedoring operations, Sydney International Container Terminals (SICTL, Hutchison Ports) and DP World (DPW) also holding leases at the Port Botany.

The land surrounding the site includes:

- Penrhyn Road and the Penrhyn Estuary to the north,
- Various port-related industries, and community areas, to the east,
- The DPW Terminal to the south,
- The Hutchison Ports (SICTL) Terminal to the west; and
- The Sydney Kingsford Smith Airport further afield to the north-west.

The surrounding natural environment consists of Penrhyn Estuary and Botany Bay which are sensitive to environmental impacts from the Port Botany Precinct.

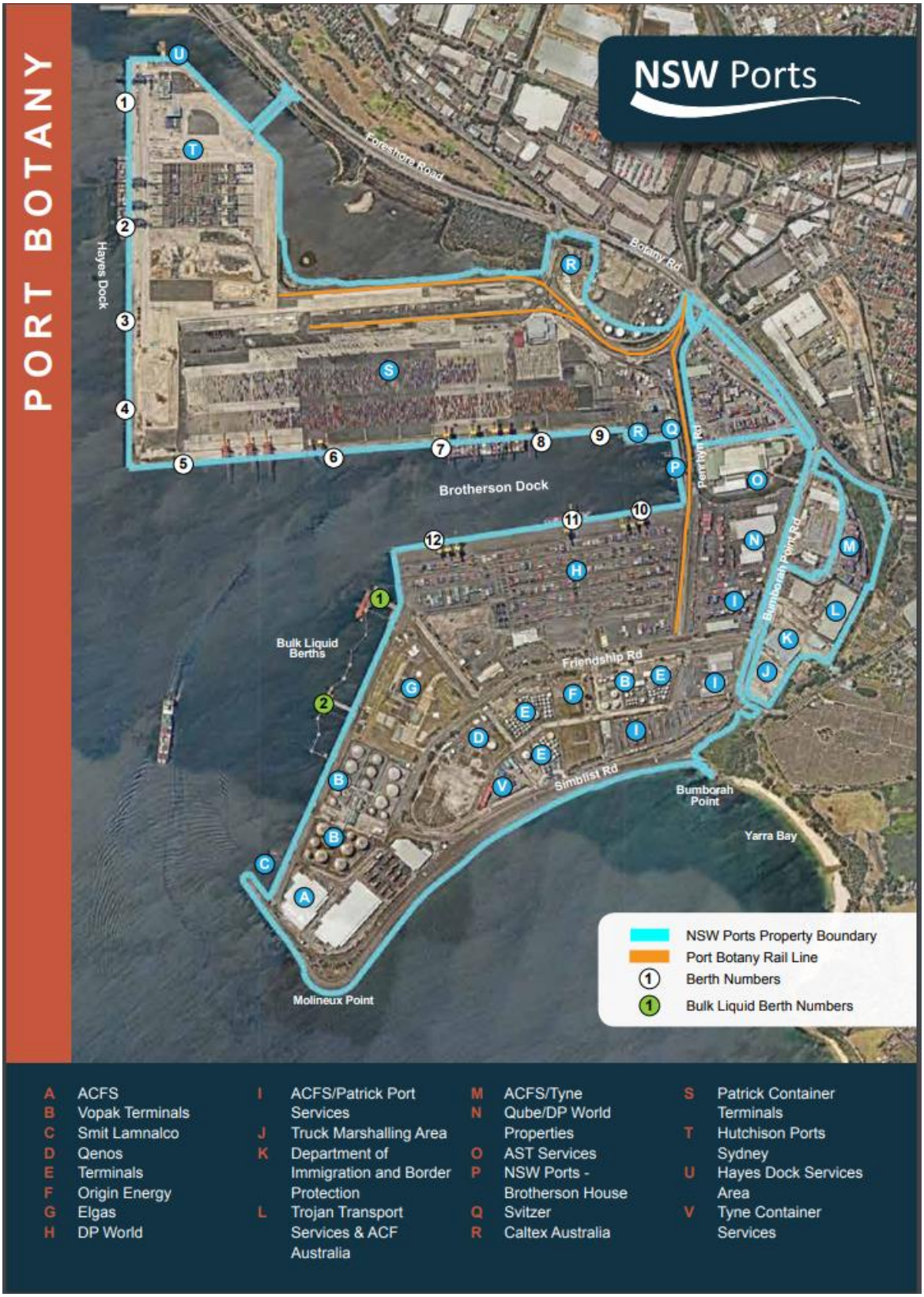
3.2 Site Identification

The site comprises the following property (**Table 3.2.1**) and the site location is illustrated in **Figure 3.2.1.**

Table: 3.2.1: Site Identification

Site Identification	
Street Address	Brotherson Dock, Penrhyn Road, Port Botany
Lot and Plan/Diagram	Lots 1-6, 8-14 and 16-19 DP 452236; Lot 1 DP 804556; & Lots 1 and 2 DP 1009870, Brotherson Dock, Penrhyn Road, Port Botany in the Botany Bay local government area (Source DA 453) LOT 202 DP 1183399, LOT 203 DP 1183399 (Source EPL 6962)
Torrens Title	Property leased Folio Identifiers 202 & 203/1183399
Terminal Area	62 Hectares including 1,450m of quay line
Local Authority	NSW Ports
Land Use / Zoning	Industrial or Special (Port) Uses under the Three Ports SEPP and CBB LEP

Figure: 3.2.1: Location of the Patrick Sydney AutoStrad Terminal at Port Botany



3.3 Overview of Key Activities

Patrick's approach to risk management is based on the management of risks associated with 10 key activities carried out at the terminal:

- Operation of mobile plant e.g. automated straddles (AutoStrads), automated rail gantry cranes, forklifts, reach stackers and cranes,
- Truck transport,
- Rail transport (automated rail yard),
- Transiting refrigerated and non-refrigerated containers,
- Transiting dangerous goods,
- Berthing of ships,
- Maintenance and servicing plant and equipment,
- Storage of fuel, and refuelling mobile plant,
- General operation of the terminal; and
- Office administration.

3.4 Site Facilities and Operation

The Terminal loads and unloads containers from ships berthed at the dock and has temporary container storage capabilities for its customers. Road and rail access to the site enables trucks and trains to transport containers to and from the Terminal. The operational capacity of the Terminal is 2.5 million TEU per annum, although current operational levels are approximately 700,000 TEU.

The Terminal operates 24 hours a day, 7 days a week, with a total staff of approximately 350 including operational, maintenance, management, and administrative personnel.

A major redevelopment of the Terminal was completed in 2016, including incorporation of the 'Knuckle' area and 'Ramp D' into operations, as well as the procurement of AutoStraddles (Automated Straddle Carriers) and associated infrastructure. The redevelopment increased the total area, quay line and Twenty-Foot Equivalent Unit (TEU) capacity of the Patrick Terminal. The current site layout is shown in **Figure 3.4.1**. The Terminal comprises of the following infrastructure:

3.4.1 Administration Building and Control Tower

A single-storey administration building with a 43-metre-high control tower is located in the south-eastern portion of the site closest to NSW Ports' Brotherson House. The administration building occupies of approximately 2,000 m^2 and includes office space, first aid rooms, storerooms, training facilities and amenities.

3.4.2 Maintenance Building – Workshop and Administration

The maintenance area includes:

- an all-weather workshop with service bays designed to house AutoStrads, smaller associated workshops and storerooms,
- a two-storey administration building providing office space for service engineers and technical staff; and
- a single-storey main store building.

Figure: 3.4.1: Patrick's Terminal Layout at Port Botany

3.4.3 Quay Cranes (Ship to Shore) and Wharf

The stevedoring operations involve the loading and unloading of shipping containers on and off container ships at any of the four (4) berths (6, 7, 8 and 9) at Brotherson Dock. This task is carried out by up to nine quay (ship to shore) cranes which can move on rails along the wharf.

3.4.4 Auto Yard

The AutoStrad operating area (or 'Auto Yard') is used for the transport of 'in-transit' containers. This includes loading and unloading containers from vessels, trucks, rail wagons, container stacking (including dangerous goods containers), straddle operations, crane operations, and straddle parking.

Containers are stacked in marked blocks and are then transferred by AutoStrads to and from the truck and rail exchange areas. Approximately 6,600 ground slots are currently available for container stacking and an additional 450 slots provide facilities for refrigerated ('reefer') containers.

Up to 58 AutoStrads (automated straddles) operate within the yard, carrying containers between the quay cranes and the container stacking area.

3.4.5 Fuel Storage and Decanting Bay

A fuel storage area with associated refuelling bays is located next to the AutoStrad parking area in the eastern part of the terminal. The refuelling facility stores approximately 130,000 litres of diesel across two self-bunded 'tank-tainers'. The decanting bay includes appropriate bunding and containment structures, pipework, dispensing points, emergency stop controls, and other aspects of installation which reduce the risk of spills and leaks. Spill kits are available in strategic location across the site and appropriately stocked. All spill response materials are routinely inspected and restocked by contractors/service providers as arranged by the Maintenance Department.

3.4.6 Wash Bay

The single operating Wash Bay is located outside the Maintenance Workshop and is used for cleaning the AutoStrads. Wastewater from this area drains via a floor sump to a grated open concrete pit with an under/over oil water separator. The wastewater is then pumped through an Auto Batch unit to remove solids and directed to sewer under the conditions of a Trade Waste Agreement (TWA) with Sydney Water (Consent No. 24990). A program of monitoring is required under the TWA, details of which are included in **Section 6.4 - Waste and Wastewater Management Plan** of this OEMP.

3.4.7 Grease Trap

Grease Arrester Pit (Trade Wastewater Discharge Schedule, Permit No. 40110) collects greasy wastewater from the Canteen/Kitchen. The Sydney Water Wastesafe barcode is located on the fence post directly behind the Grease Arrester Pit. The grease trap is cleaned 6-monthly by a licensed waste transporter. The grease and sludge are disposed at a suitably licensed waste treatment or disposal facility. Refer to **Section 6.4 - Waste and Wastewater Management Plan** of this OEMP.

3.4.8 Oil and Waste Oil Storage

Oils (hydraulic and lubricating), coolant and greases are stored in the Oil and Grease Store located off the Maintenance Workshop. Liquids (excluding grease) are stored on plastic bunded pallets. Waste oil is stored in 240L drums on bunded pallets in the designated Waste Oil Store. The drummed waste oil is collected on an as-needs basis by an appropriately licensed waste transporter and disposed as regulated waste to an appropriately licensed waste receiving facility.

3.4.9 Truck Grids and Weighbridges

Truck grids and weighbridges are located at the northern portion of the Terminal due south of the rail line. Trucks enter the Terminal from Penrhyn Road via Ramp D at the truck gate and are processed at the OCR Facility for registration. Truck grids provide for the orderly queuing and exchange of containers from cranes to trucks (and vice versa). A maximum of 199 truck parking and / or exchange slots are available within the Terminal. Two weighbridges facilitate the weighing of trucks prior to leaving the Terminal. Trucks are weighed in accordance with the NSW Roads and Maritime Services (RMS) Chain of Responsibility provisions in the *Road Transport (General) Regulation 2013*.

3.4.10 AutoRail Siding

Currently the rail siding consists of four 600-metre-long sidings with a mechanically actuated crossover points. All trains are propelled into the siding and are restricted to a total length of 600 metres. Trains are serviced by three Automated Rail Mounted Gantries ARMGs moving container to and from the wagons directly in the Automated yard. There are approximately 56 train movements each week.

3.4.11 CargoLink

An empty container exchange area is positioned parallel to Penrhyn Road (eastern side of the terminal). Road transport trucks enter the Terminal from Penrhyn Road via Gate B110 and empty shipping containers are unloaded by heavy forklifts and placed into the empty container park. The containers are relocated to the MX Pads, when this staging area is full the gates are transitioned allowing the AutoStrads access to move the containers into the Auto Yard in readiness for moving to the back reach of the crane to be loaded onto the appropriate ship.

3.4.12 Optical Character Recognition (OCR) Facility

The OCR Facility is located at the truck entry point (Ramp D). Five traffic lanes at the truck entry and exit points tie into the OCR Facility, which is used to scan and validate shipping containers.

3.4.13 Customs Building

A single-storey demountable Customs building is located adjacent to the OCR Facility at the truck exit point of the Terminal.

3.4.14 Training Building

Training rooms are in the building adjacent to former Security Gate House at Gate B110.

3.4.15 Car Park

Car park facilities include a maximum of 333 car parking spaces within two car parks. At least two visitor and one mobility impaired parking space is provided adjacent to the building entries. The number of car parking spaces is sufficient to cater for all employees, contractors/service providers and visitors at the Terminal.

4. IMPLEMENTATION AND OPERATION

4.1 Stakeholder Identification and Consultation

Table: 4.1: Patrick SAT Stakeholder Identification and Consultation

Stakeholder Identification	
Internal Stakeholders	• Contractors/service providers • Non-operational functions e.g., Safety; Human Resources, Finance, etc • Operations personnel • Engineering & Maintenance Department • Terminal Management • Patrick Corporate (the Management Team)
External Stakeholders	• Customers (shipping lines) • Transport carriers • DP World Terminal • Hutchison Ports (SICTL) Terminal • NSW Ports • Port Authority of NSW • Bayside Council, and Randwick City Council • NSW Department of Planning and Environment • NSW Office of Environment and Heritage / Environment Protection Authority • NSW Roads and Maritime Services • Transport for NSW • The local community • The PBCCC
Stakeholder Consultation	As required by the CoA, the original OEMP has been developed in consultation (where required) with: • NSW Ports • Bayside Council, and Randwick City Council • NSW Department of Planning and Environment • NSW Office of Environment and Heritage / Environment Protection Authority • NSW Roads and Maritime Service.
	This revised version of the OEMP has been sent to the DPIE.

4.2 Environmental Roles and Responsibilities

A summary of the roles and responsibilities of Patrick employees and contractors/service providers are described below in **Table 4.2.1.** The terminal's key contacts, and a schedule of the environmental related tasks are shown in **Tables 4.2.2 and 4.2.3**.

More detailed roles and responsibilities with respect to environmental management have been documented in the Patrick HSEMS in **PAT_HSE_PRO_01_001 - Leadership Commitment & Accountability Procedure**.

Table: 4.2.1: Summary of the Terminal's Environmental Duties and Responsibilities

Terminal Work Group	Summary of Environmental Duties & Responsibilities
Management	• Monitor and comply, at a minimum, with applicable environmental legal requirements and conduct activities in accordance with relevant industry codes and standards • Maintain and improve an environmental management system where environmental risks are identified and proactively managed to reduce the potential for environmental harm • Implement systems to prevent pollution, improve resource efficiency and minimise impacts on the community in which the Terminal operates • Report and appropriately manage all environmental hazards, incidents, community complaints and legacy conditions • Incorporate environmental considerations into decision making and procurement processes • Communicate with employees and contractors/service providers, encouraging ideas for improvement • Communicate openly with the community, regulators, customers, and other stakeholders • Set and review internal environmental objectives, targets, and implement programmes to achieve these • Measure and report on our environmental performance to our internal and relevant external stakeholders • Implement verification processes to ensure compliance with this policy and to drive improvement of our environmental performance • Deliver induction, training, and awareness programs to ensure employees and contractors/service providers understand their environmental obligations and have the necessary skills to minimise the environmental risks of the PBT operations
Employees & Contractors/ Service Providers	• Co-operate to the extent necessary to allow Patrick to meet its 'Duty of Care' obligations • Report all environmentally hazardous conditions or practices to SAT's management • Where appropriate, make safe any hazard that could result in an environmental incident before advising Patrick management • Report all environmental incidents and near misses immediately • Undertake training as directed or required • Identify and report opportunities to improve environmental management practices and share with management • Support environmental initiatives to reduce environmental risks/hazards

The table below sets out key contacts at Patrick's Sydney AutoStrad Terminal.

Table: 4.2.2: Key Contacts

Role	Name	Contact Number
Terminal Manager	Bruce Guy	**Patrick Terminal Shift Manager:** (02) 9394 0631 or 0409 914 149 **NSW Ports: After Hours:** 0417 265 672
Operations Manager	Gus May	
Health, Safety & Environment Manager	Natalie Cerda	
PBCCC Representative	Natalie Cerda	
Engineering & Maintenance Manager	Rajan Manickam	

The table below sets out environmental duties to be conducted at the Terminal at defined intervals.

Table: 4.2.3: Schedule of Environmental Duties

Operative	OEMP Component	Terminal Contact	Examples of Document / Record
Monthly Duties			
Contractors/ Service Providers	Inspections of oil and waste oil storage Facilities	Maintenance Facilities Manager	Contractor's/Service Provider's record
Contractors/ Service Providers	Inspection of Hazchem storage areas and stormwater valves		
Contractors/ Service Providers	Spill kit inspections		
Contractors/ Service Providers	Waste Collection & Disposal (General and Recycling)	Maintenance Purchasing Officer	Waste Docket, Waste Report received from Contractor/ Service Provider
Contractors/ Service Providers	Waste Collection & Disposal (Hazardous)	Maintenance Purchasing Officer	Purchase Order, Invoices / Dockets, EPA approved transporter, and approved disposal location (Consignment Authorisation and Transport Certificate)
Contractors/ Service Providers	Diesel Storage Tank Inspection / Maintenance	Maintenance Planning Coordinator	Environmental Inspection Checklist
Three or Four-Monthly Duties			
E&M Manager	Site Environmental Inspection	HSE Manager	Environmental Inspection Spreadsheet

Operative	OEMP Component	Terminal Contact	Examples of Document / Record
Three or Four-Monthly Duties - *continued*			
Contractors/ Service Providers	Power Bollards & Diesel Generators Inspection	Maintenance Facilities Manager	Contractor's/Service Provider's record
Contractors/ Service Providers	Oil Separator Service		
Six-Monthly Duties			
Acoustics Consultant	Noise Monitoring	HSE Manager	Noise Monitoring Reports
Annual Duties			
HSE Manager	Environmental Internal Audit	HSE Manager	Environmental Internal Audit (including OEMP component)
Contractor/ Service Providers	Diesel & Refuelling System	Maintenance Planning Manager	6/12-monthly Service
HSE Manager	Licence / Permit Renewal	HSE Manager	DG Licence, Environment Protection Licence, Trade Wastewater Discharge, Grease Arrestor Permit
Occasional Duties – as required			
Contractors/Service Providers appointed by Sydney Water	Wastewater monitoring (wash bay)	Maintenance Facilities Manager	As required by TWA
Contractors/ Service Providers	Diesel Fuel Truck Service	Maintenance Planning Manager	Diesel Fuel Truck 6-monthly Service records (Contractor/Service Provider)
Contractors/ Service Providers	Diesel Generator Service (Reefer area)	Maintenance Facilities Manager	Maximo
Contractors/ Service Providers	Oily Waste Collection & Disposal	Maintenance Purchasing Officer	Purchase Order, Invoices / Dockets, EPA approved transporter, and approved disposal location (Consignment Authorisation and Transport Certificate)
Contractors/ Service Providers	Waste Tyres	Maintenance Purchasing Officer	Purchase Order, Invoices / Dockets, EPA approved transporter, and approved disposal location (Consignment Authorisation and Transport Certificate)
HSE Manager	OEMP Review	HSE Manager	OEMP (2-3 years)

4.3 Induction and Training

Patrick's Terminal is committed to providing appropriate induction and training to its employees to perform their roles without risk to health, safety, and the environment. All operating and maintenance personnel are required to suitability qualified and trained before handling the tasks. Records of all inductions and training are maintained either in the induction system, or separately.

4.3.1 Statutory Requirements and Legislative Framework – Environmental Training

Table: 4.3.1.1: Statutory Requirements and Legislative Framework specific to Environmental Training

Statutory Requirements and Legislative Framework	
NA	
Development Consent DA 494	C4.4
Development Consent DA 453	3.62
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
EIS Prediction & Conclusion	32.2.4

4.3.2 Training Framework

Patrick Terminal has developed a training framework that is based on role-specific training system. This structure allows for different tyres of training to be provide to relevant employees in different roles. The amount of exposure to environmental hazards and the involvement in environmental management is the criteria for selecting the training.

Table: 4.3.2.1: Environmental Training Framework

#	Training Module	Relevant Employees	Training Content
1	Employee Induction	All Patrick staff attend the induction, which takes place in the first week of commencing work at Patrick.	Aims to ensure employees can recognise and communicate environmental incidents and hazards to relevant personnel. The training includes: • HSE Policy • Environmental issues relevant to the Terminal and how they are managed • Evacuation procedures • Reporting near misses / incidents / hazards to relevant personnel.

#	Training Module	Relevant Employees	Training Content
2	Equipment Operation and Stevedore Roles	Primarily for stevedore roles and operators of plant. Training takes place as part of the employee development program and based on operational requirements.	Aims to make relevant employees competent in identifying, reporting and managing environmental incidents such as spills from containers or leaking mobile / fixed plant / equipment. This training includes: • Plant refuelling operations • Incident response • Protection of the Terminals stormwater drainage system • Evacuation procedures • Communication of actual or potential incidents to relevant person
3	Drain safe wardens	Maintenance personnel, Safety Facilities	The Drain Safe wardens are a pollution control system which is installed in key stormwater drains and deployed in the event of a spill incident on the terminal. This is a specific training module / toolbox talk / inductions comprising of in-situ instructions in how to deploy the Drain Safe wardens. Stormwater drain containing a drain warden are labelled.
4	IMDG	Clerks, Yard Managers, Shift Managers, and other operational supervisors shall be trained in accordance with the IMG Code.	Aims to educate relevant employees in the classification and management of dangerous goods and ensure their competence in implementing response plans and coordinating resources to manage dangerous goods incidents. The training is in accordance with the IMDG Code (chapter 1.3) and includes both General Awareness/Familiarization training and Function-Specific training. The IMDG Code is an advanced training module which will be completed and assessed in the classroom environment.
5	Pronal OFR Anti-Pollution Stoppers (plugs)	Maintenance Technical Specialists	During continuous rainfall, activate the SMC pneumatic control system which deflates the balloons in the trench drain at the Truck Grid. After the extreme rainfall event has concluded deactivate the SMC pneumatic system which reinflates the balloons in the trench drain

#	Training Module	Relevant Work Group	Training Content
6	Toolbox Talks	Stevedores, Team leaders, Mobile plant operators / drivers (e.g. crane, forklift, reach stacker, ARMGs), Maintenance personnel, Shift & Yard Manager	On a needs basis toolbox talks with an environmental focus, such as littering, noise management, leaks and spills, are raised at pre-shift toolbox talks for Operations personnel by the frontline managers, and for Maintenance personnel by the Technical Specialist and/or contractors/service providers under supervision.
7	Pollution Incident Response Management Plan (PIRMP)	Maintenance – Technical Specialists; Operations – Safety Facilitator	The PIRMP is contained in the **Terminal's Emergency Response Plan (PBT_HSE_PLN_09_01)** and includes: • Incident response; • Spill/leak control, containment and clean-up; • Close drain wardens to protect the stormwater drains; • Use of the spill absorbent materials; • Evacuation procedures • Identify, report and manage leaks / spills from shipping containers, or mobile plant; • As required gather information / participate in the investigation

4.3.3 Key Tasks and Responsibilities

A comprehensive list of duties and responsibilities is provided in **Section 4.2** of this OEMP. The key responsibilities for the implementation of operational controls for the Terminal are provided below.

Table: 4.3.3.1: Environmental Training Management – Key Tasks and Responsibilities

Task		Responsibility
1	Induction and training of employees, contractors/service providers and visitors online induction via LMS or Pre-qualification Contractor Management system (Avetta formerly known as Pegasus)	Training Coordinator, HSE Manager
3	Establish environmental training resources on a needs basis e.g., toolbox talks, spill response, IMDG	Training Coordinator, HSE Manager
3	Conduct toolbox talks and record details in shift report	Frontline Managers; Operations - Shift and Yard Managers; Maintenance – Technical Specialists, key contractors/ service providers
4	Identify any additional training required.	HSE Manager
5	Induction and training records are maintained.	Training Coordinator, HSE Manager

4.3.4 Performance Expectations

The implementation of this section of the OEMP and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 4.3.4.1: Environment Induction and Training Management - KPIs

Key Performance Area		KPI
1	Site induction is completed within the first few weeks of starting at the Terminal, and then annually.	Initial, and a minimum of every two years, unless otherwise required
2	IMDG training	As per training schedule
3	Emergency Response drill.	1 to 2 years
4	Environmental related toolbox talks conducted.	On a needs basis
5	Emergency Response Plan (including PIRMP) is reviewed, updated accordingly, and re-issued.	Within the established review period

4.4 Environmental Reporting

To ensure the Terminal's environmental reporting requirements and obligations are fulfilled in accordance with development consent and licence conditions.

4.4.1 Statutory Requirements and Legislative Framework

The statutory requirements legislation that applies to this section of the OEMP is listed below:

Table: 4.4.1.1: Statutory Requirements and Legislative Framework

Statutory Requirements and Legislative Framework	
• *Environmental Planning and Assessment Act 1979 (NSW)* • *National Greenhouse and Energy Reporting Act 2007 (NGER Act) (Cth)* • *Protection of the Environment (Operations) Act 1997 (NSW)*	
Development Consent DA 494	C4.1, and C4.2
Development Consent DA 453	3.52, and 6.6
EPA Licence 6962	R2, and R1
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
EIS Prediction & Conclusion	NA

4.4.2 Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 4.4.2.1: Environmental Reporting – Key Tasks and Responsibilities

	Task	Responsibility
1	Report any leaks, spills or other environmental incidents (e.g. gas leaks from containers). Recipient (as a minimum): HSE Manager Notification required: Immediately upon becoming aware of an incident.	All site personnel
2	Provide verbal notification of a pollution incident where material harm to the environment is caused or threatened. Recipient (as a minimum): EPA, NSW Ports and DPIE Notification required to be reported by Patrick: Upon becoming aware of an incident: • Immediately - EPA • Within 2 hours – NSW Ports • Within 12 hours - DPIE	HSE Manager

	Task	Responsibility
3	Submit full written details of the environmental or pollution incident, with actual or potential significant off-site impacts on people or the biophysical environment. Recipient (as a minimum): EPA, NSW Ports and DPIE Notification required to be reported by Patrick: Upon becoming aware of an incident: • Within 24 hours – NSW Ports • Within 7 days of the date of incident – EPA, DPIE, Port Authority of NSW, Health Department and Bayside Council.	HSE Manager
4	Provide acknowledgement and initial feedback of an inquiry, comment, or complaint. Recipient (as a minimum): Complainant, EPA, NSW Ports, DPIE & PBCCC Notification required to be reported by Patrick: Upon receiving an inquiry, comment, or complaint.	HSE Manager
5	Submit the finalised Annual Environmental Management Report (AEMR) (which includes the Annual Compliance Report (DA 453, condition 6.6), and the Environmental Management Compliance Report (EMCR)) to NSW Ports and the DPIE within 60 calendar days after the end of the reporting period of the AEMR, i.e., no later than 28 February of the next year. The EMCR details activities at the Terminal and the extent to which Patrick has complied with the OEMP. After approval from DPIE, upload to the Patrick website.	HSE Manager
6	Submit the Annual Return (which includes the Statement of Compliance and a Monitoring and Complaints Summary) to the EPA via the eConnect website.	HSE Manager
7	Arrange for a DPIE-approved Auditor to conduct an Independent Environmental Audit for the Terminal annually. The objective is to assess environmental performance, compliance with relevant standards, and the adequacy of the OEMP.	HSE Manager
8	Provide all documents and reports required to be submitted to the Secretary in an appropriate electronic format as required under this consent, shall be in a format acceptable to those parties to minimise resource consumption.	HSE Manager
9	Provide Terminal information for emissions generated, primarily due to fuel and energy usage for National Pollutant Inventory (NPI) to the National HSE Manager.	HSE Manager
10	Prepare and submit NPI annually to the EPA as required by the NPI National Environmental Protection Measures (NEPM) and the NSW *Protection of the Environment (General) Regulation 2009*.	Nat. ECS Manager
11	Prepare and submit NGERs emissions reporting annually to the Regulator in accordance with the NGER Act.	Nat. ECS Manager

	Task	Responsibility
11	Prepare and submit NGERs emissions reporting annually to the Regulator in accordance with the NGER Act.	Nat. ECS Manager
12	Prepare dangerous goods (Class 2.3) throughput data for the period 1 September of the previous year to 31 August of the current year, e.g. class, tonnage, number of TEUs and packaging sizes, and provide to NSW Ports for their preparation of the **Annual Dangerous Goods Report** (DA-494, C2.17).	HSE Manager
13	Prepare and submit to the DPIE a combined Annual Dangerous Goods Report for Patrick and Hutchison (SICTL) as per DA-494.	NSW Ports
14	Engage an Acoustic Consultant to prepare a biannual Noise Monitoring and Compliance Report (NMCR) in accordance with DA 494 condition C2.7, DA 453 condition 5.8 and EPL 6962 condition E1, and submit to the EPA, NSW Ports and DPIE six-monthly. Upload to the Patrick website.	HSE Manager
15	Environmental Reports to be prepared as required by an authorised officer of the EPA. Submission to the EPA in accordance with EPL Condition R3.3. (Additional environmental reporting may be required when an authorised officer of the EPA requests a report).	HSE Manager
16	Preparation of reports detailing compliance with all or any part of the conditions of consent as may be directed by DPIE. To be submitted to the DPIE and NSW Ports as required.	HSE Manager

4.4.3 Reporting

4.4.3.1 Initial Reporting of Environmental Incidents

The frontline manager will initially report the environmental incident / event into Patrick's Incident Reporting System, Noggin. If the incident requires to be escalated to others, the frontline manager, or alternatively the HSE Manager, will follow the Terminal's – HSE Incident / Near Miss Escalation Matrix.

4.4.3.2 Environmental Incident Classification and Reporting

The classification and reporting of incidents will be undertaken in accordance with Patrick's **HSE Standard 10– HSE Incident Management and Corrective Action (i.e., PAT_HSE_PRO_010_002).**

Patrick is obliged to notify and report incidents occurring or originating within the Terminal to the appropriate regulatory organisations within the timeframes prescribed in NSW legislation, EPL, the Conditions of Approval/ Consent, and Lease Conditions.

Environmental incidents are to be reported to the EPA in accordance with EPL 6962. Environmental Reports to be prepared as required by an authorised officer of the EPA and submitted to the EPA in accordance with EPL condition R3.3. Copies of the same report will also be sent to the DPIE and NSW Ports. (Additional environmental reporting may be required when an authorised officer of the EPA requests a report).

Unless noted otherwise, incidents that occur beyond the limits of the Terminal (including on board ships berthed at the Terminal) are outside the scope of the OEMP.

4.4.3.3 Environmental Incident Investigation

Environmental incidents are to be managed in accordance with Patrick's **HSE Standard 10 – HSE Incident Management and Corrective Action (PAT_HSE_010_002**) which requires that:

- HSE incidents (including near misses) are promptly reported, including those which are legally notifiable to HSE regulators; and
- HSE incidents (including near misses) are investigated by persons competent in the application of Patrick's procedures for incident investigation and generate corrective actions that focus on identifying system failures and root causes.

4.4.3.4 Public Inquiry, Comment and Complaint Handling

Any environment related inquiries, comments or complaints received from the public or regulatory agency are investigated by the terminal's HSE Manager. Records of the inquiry, comment or complaint and any action taken is kept in Patrick's incident reporting system, NOGGIN. Refer to **Section 4.6 – Public Inquiry, Comment and Compliant Handling** in this OEMP.

4.4.3.5 Annual Environmental Audits

Annual Environmental Audits are required to be undertaken by DA 494 and DA 453, and audit reports are to be made publicly available on Patrick's website: https://patrick.com.au/environmental-monitoring/
Refer to **Section 4.5 – Environmental Inspection and Auditing** in this OEMP.

4.4.3.6 Annual Environmental Management Report (AEMR)

Following submission of the AEMR to the DPIE and NSW Ports, the finalised AEMR will be posted on the Patrick website – https://patrick.com.au/environmental-monitoring/

4.4.3.7 Annual Return (Statement of Compliance)

As a licensee Patrick is required to submit an annual return stating its compliance with the licence conditions and report the pollutant loads generated by the premises. The Annual Return is required by EPL 6962 to be completed and submitted to the EPA via the eConnect EPA portal:
https://apps.epa.nsw.gov.au/profileapp/auth?_ga=2.239836163.1097980929.1553133544-1038785920.1508789015

4.4.4 Performance Expectations

The implementation of this section of the OEMP and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 4.4.4.1: Environmental Reporting – KPIs

Key Performance Area		KPI
1	Ensure the AEMR is completed and issued 60 calendar days after the end of each reporting period.	Due by 28 February of the following year
2	Ensure the Annual Return is completed within 60 days after the EPL anniversary date (1st April).	Due by 30 May of the same year
3	Ensure NPI and NGERs reporting is submitted to the Regulator.	By the due date

4.5 Environmental Inspection and Auditing

To ensure that audits required by the development consent, and environmental inspections and audits required by the Patrick HSEMS are scheduled and conducted at the required frequency and by a suitably qualified and/or experienced person/team. The following audits are required to be conducted at the Terminal:

- **Annual Environmental Audit:** *ISO 14010 – Guidelines and General Principles for Environmental Auditing, and ISO 14011 – Procedures for Environmental Auditing*
- **Three-Yearly Hazard Audit:** DPIE's *Hazardous Industry Planning Advisory Paper No. 5, "Hazard Audit Guidelines"*
- **Annual HSEMS Surveillance Audit:** *ISO 14001:2015 Environmental Management Systems and ISO 45001:2018 Occupational Health and Safety*

4.5.1 Statutory Requirements and Legislative Framework

The statutory requirements legislation that apply to this section of the OEMP is listed below:

Table: 4.5.1.1: Statutory Requirements and Legislative Framework

Statutory Requirements and Legislative Framework	
• *Environmental Planning and Assessment Act 1979 (NSW)*	
Development Consent DA 494	C4.5
Development Consent DA 453	3.53 and 6.7
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
EIS Prediction & Conclusion	NA

4.5.2 Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 4.5.2.1: Environmental Inspection and Auditing – Key Tasks and Responsibilities

	Task	Responsibility
1	Conduct environmental inspections of the Terminal with the functional manager or their representative, at least quarterly.	Operations Manager; Engineering & Maintenance Manager; HSE Manager
2	Engage an Independent Environmental Auditor approved by the DPIE to conduct a combined environmental audit covering: • DA 494 (C4.5) – Annual independent environmental audit • DA 453 (6.7) – Three-yearly independent hazard audit	HSE Manager
3	Conduct an Independent Environmental Audit as arranged by Patrick.	Independent Environmental Auditor, approved by DPIE
4	Submit the Independent Environmental Audit Report to the DPIE and NSW Ports.	HSE Manager

	Task	Responsibility
5	Engage an Independent Safety Auditor approved by the DPIE to conduct a Hazard Audit every three years as per DA 453, condition 3.53.	HSE Manager
6	Conduct an Independent Hazard Audit as arranged by Patrick.	Independent Safety Auditor, approved by DPIE
7	Submit the completed Hazard Audit to the DPIE.	HSE Manager
8	Routinely review the OEMP.	HSE Manager
9	Ensure Annual HSEMS Audit is conducted.	Nat. ECS Manager
10	2021, and every five years thereafter conduct an independent audit of compliance for the new port facilities at Port Botany, and the effectiveness of measures to mitigate impacts on listed migratory bird species. Arranged by NSW Ports, and Patrick.	Independent auditor (accredited by the Quality Society of Australasia) approved by DPIE, HSE Manager

4.5.3 Monitoring and Reporting

Environmental inspection and Audit requirements are documented in **Patrick HSEMS – Workplace Inspection & Monitoring (PAT_HSE_PRO_05_001); and – System Auditing & Management Review (PAT_HSE_PRO_07_001).**

4.5.3.1 Inspections

Patrick conducts inspections in accordance with Patrick HSEMS in **PAT_HSE_PRO_05_001 - Workplace Inspection & Monitoring Procedure**. Findings from environmental inspections are recorded on a rolling spreadsheet and issued to the Department Manager where responsibilities will be assigned, and actions will be followed-up and closed-out in accordance with set time frames.

4.5.3.2 Internal and External Audits

Patrick conducts internal audits on their HSEMS annually. Internal Audit requirements have been documented within the Patrick HSEMS in **PAT_HSE_PRO_07_001- System Auditing & Management Review Procedure**.

Non-Conformances and Observations/Improvement Opportunities identified during audits will be documented as actions in Patrick's HSE incident management database, NOGGIN. Responsibilities will be assigned, and actions will be followed-up and closed-out in accordance with set time frames.

4.5.3.3 Monitoring and Corrective Actions

An important component of the OEMP is the assurance of its implementation and monitoring of the performance of all aspects of the plan. The minimum frequency of performance monitoring and corrective action tasks undertaken at the Terminal are presented in **Table 4.2.1 Environmental Duties and Responsibilities**. Further details of monitoring are provided in each management plan located in Section 6 of this OEMP. These management plans are the primary instruments controlling monitoring and reporting of results. Environmental Incident and Near Miss reporting is electronically entered into the Patrick Terminals incident management Database (NOGGIN). Emergency Response actions are contained within **Emergency Response Plan (PBT_HSE_PLN_09_01).**

4.5.4 Performance Expectations

The implementation of this section of the OEMP and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 4.5.4.1: Environmental Inspection and Auditing – KPIs

Key Performance Area		KPI
1	Conduct environmental inspections for the Terminal.	Quarterly (3-monthly)
2	Ensure the Annual Independent Environmental Audit is conducted immediately after the end of each reporting period (i.e. calendar year) and the final audit report submitted to NSW Ports and the DPIE.	Due by 31 January of the following year
3	Ensure the Annual Environmental Management Report (AEMR) is completed and submitted to NSW Ports and the DPIE 60 calendar days after the end of each reporting period (i.e. calendar year).	Due by 28 February of the following year
4	Ensure the three-yearly hazard audit is conducted within the three-yearly period and the final audit report submitted to the DPIE.	Within 45 calendar days of the audit having been conducted
5	HSEMS surveillance audit to be conducted for the Terminal by an approved auditor.	One HSEMS Audit per year
6	After construction of the new port facilities at Port Botany has been completed, and every five years thereafter an independent audit of compliance with the conditions of approval for the new port facilities at Port Botany, and the effectiveness of measures to mitigate impacts on listed migratory bird species, is carried out. The independent auditor must be accredited by the Quality Society of Australasia, or such other similar body as the Minister may notify in writing. The audit criteria must be agreed by the Minister within six months of the fifth anniversary of completion of construction of the new port facilities at Port Botany, and within 6-months of every 5th anniversary thereafter.	Due 2021 and every 5 years thereafter

4.6 Handling Environment Related Public Inquiries, Comments and Complaints

Patrick operates a 24-hour 7-days a week, free-call environment complaints telephone number (Ph. (02) 9394 0308) with the aim for the public to reach a person who can arrange appropriate corrective action to the complaint within two hours of receiving the call. Patrick is committed to managing inquiries, comments and/or complaints received from the public in such a manner it achieves good outcome community and operational outcomes.

4.6.1 Statutory Requirements and Legislative Framework

The legislation that applies to the implementation of this section of the OEMP is listed below:

Table: 4.6.1.1: Statutory Requirements and Legislative Framework

Statutory Requirements and Legislative Framework	
• *Environmental Planning and Assessment Act 1979 (NSW)* • *Protection of the Environment (Operations) Act 1997 (NSW)* • *Protection of the Environment Operations (Clean Air) Regulation 2010 (NSW)*	
Development Consent DA 494	C3.1
Development Consent DA 453	3.63 and 3.64
EPA Licence 6962	M2.1, M2.2, M2.3, M2.4, M3.1, M3.2, M3.3
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
EIS Prediction & Conclusion	22.5.2

4.6.2 Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 4.6.2.1: Public Inquiry, Comment and Complaint Handling – Key Tasks and Responsibilities

	Task	Responsibility
1	Monitor the Terminal's Community Concerns & Enquiries Line (Ph. 9394 0308).	HSE Manager
2	Provide, on request, information specific to operations, and maintenance which may have contributed to the inquiry, comment or compliant received from the public or regulator.	Operations Manager; E&M Manager; Landside Manager
3	Maintain the **Public Inquiries, Comments & Complaints Register (PBT_HSE_REG_11_02).**	HSE Manager
4	Provide feedback to the caller e.g. advise of actions taken. Arrange air or noise monitoring, review findings and assess the effectiveness of controls.	HSE Manager
5	Prepare and issue a 3-monthly report – Public Inquiries, Comments and Complaints Handling (formerly Community Complaints Handling) and upload to the Patrick website.	HSE Manager

4.6.3 Potential Sources of Environmental Related Inquiries, Comments or Complaints

Table: 4.6.3.1: Potential Sources of Environmental Inquiries, Comments or Complaints from the Public

#	Aspect	Potential Source	Impact	Control Measures (Section of OEMP)
1A	Noise	Mobile plant, machinery and equipment (quay cranes, AutoStrads, reach stackers, ARMGs, forklifts, elevated work platforms) and vehicles (utes, mini-bus, ITV trucks)	Nuisance to nearby residents resulting in an inquiry, comment, or complaint from the public directly or indirectly via NSW Ports or the EPA.	4.6, Public Inquiries, Comments or Complaint; 6.6, Operational Noise Management Plan
1B		Landing containers on vessels, hardstand areas, train wagons and/or truck trailers	Nuisance to nearby residents resulting in an inquiry, comment, or complaint from the public directly or indirectly via NSW Ports or the EPA.	
1C	Dust or Odours	The risk of dust or odours emanating from the Terminal and affecting offsite receptors is considered low. However, dust or debris may be tracked onto the surrounding road network by waste trucks leaving the site; and odour may be generated by mobile plant and truck exhausts, or potential leaks of stored gas in shipping containers in-transit	Nuisance to nearby residents resulting in an inquiry, comment, or complaint from the public directly or indirectly via NSW Ports or the EPA.	4.6, Public Inquiries, Comments or Complaint; 6.1, Air Quality Management Plan
1D		Emissions emanating from another location other than the Terminal	Nuisance to Patrick personnel / operations resulting in complaints; Potential pollution incident	
1E	Pollution incident	Leak or spill to water and/or land	Nuisance to nearby residents resulting in an inquiry, comment or complaint from the public directly or indirectly via NSW Ports or the EPA; Potential pollution incident	4.6, Public Inquiries, Comments or Complaint 6.2, Stormwater Management Plan

4.6.4 Handling Environmental Related Public Inquiries, Comments or Complaints

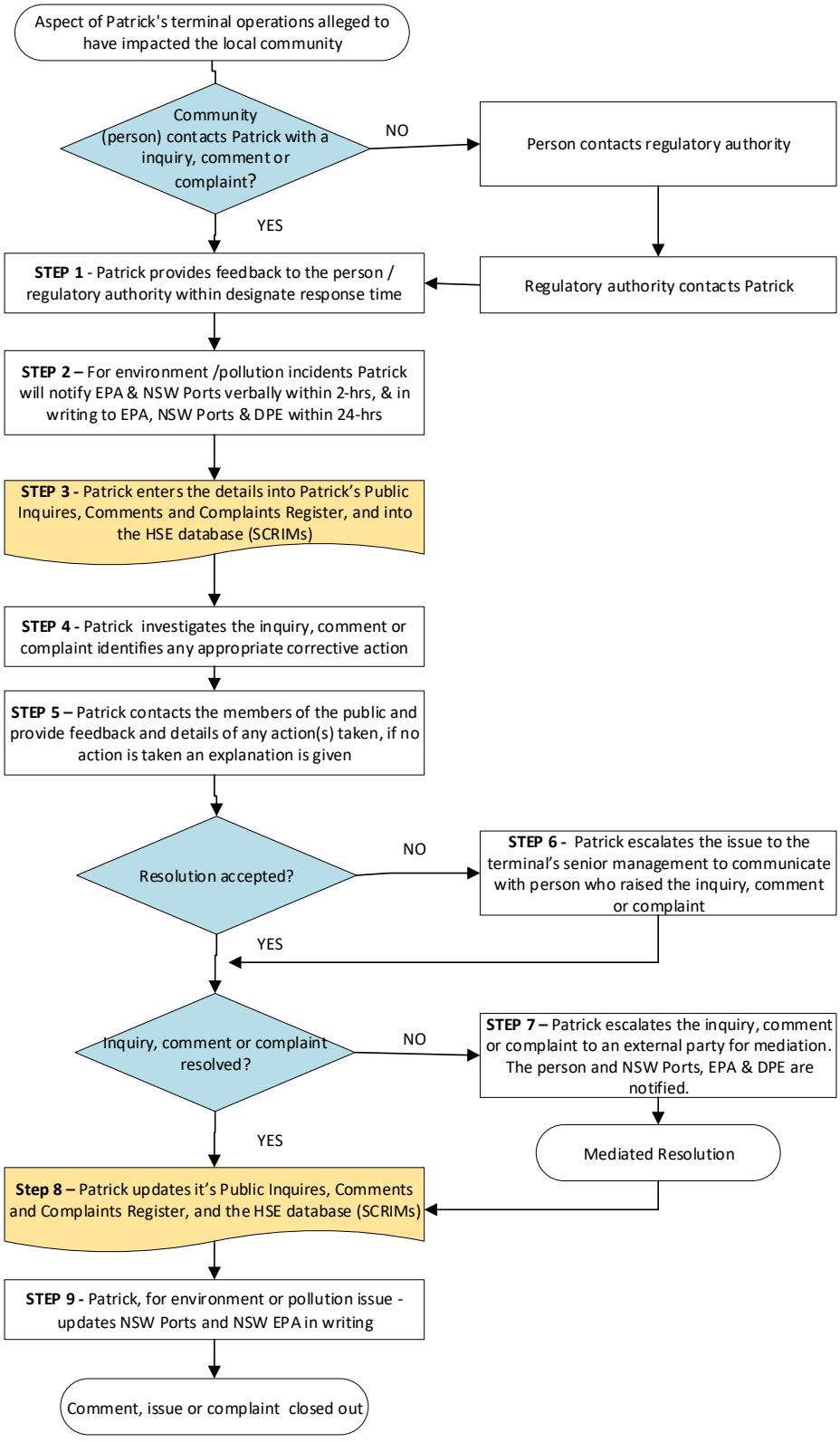


Figure: 4.6.4: Process of Handling Environmental Related Public Inquiries, Comments or Complaints

4.6.4.1 Contacting Patrick

Inquiries, comments and complaints can be received from the public via the following means:

- in person at the Patrick tower/building at Gate B105A, Penrhyn Road (off Foreshore Road), Port Botany;
- by mail, sent to Patrick, PO Box 197, Botany NSW 1455;
- by phone on the Patrick PBT community concerns and enquires 24/7 telephone number (02) 9394 0308, or
- by email via http://www.patrick.com.au/contact under the 'Contact Us' tab.

4.6.4.2 Free Call Phone Number

Patrick operates a toll-free phone number (02) 9304 0308 solely for the public to use to contact Patrick with any comments, inquiries or complaints. The phone number is operational 24 hours 7 days a week and tested weekly to ensure it remains operational. The phone number is displayed at the entry gate to Patrick's Port Botany Terminal B105A and on Patrick's website - https://patrick.com.au/about/safety-and-environment/

The Terminal's HSE Manager monitors all calls received on the free call phone number and responds to each caller.

4.6.4.3 Public Inquiry, Comment and Complaint Register

All public inquiries, comments and complaints received from the public are logged in the site's **Public Inquiry, Comment and Complaint Register** attached to the site Environmental Register.

4.6.4.4 Recording and Reporting

Each event is entered into Patrick's HSE database (NOGGIN) and relevant correspondence attached. Any inquiries, comments or complaints received are reported as part of the Terminal's daily, weekly and monthly environmental reports. Refer to **Section 4.4 – Environmental Reporting**, of this OEMP.

4.6.5 Performance Expectations

The implementation of this section of the OEMP and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 4.6.5.1: Environmental Related Public Inquiry, Comment and Complaint – KPIs

Key Performance Area		KPI
1	Inquiries, comments or complaints received from the public, which can be attributed to Patrick's operations.	Zero (0)

4.7 Community Consultation Committee

The primary mechanism used by Patrick to interface with the community is the Port Botany Community Consultative Committee (PBCCC).

The PBCCC was formed by combining the Port Botany Expansion Community Consultative Committee with the Port Botany Neighbourhood Liaison Group following agreement between its members and approval from DPIE on 16 September 2013.

As per DA 494 (conditions 3.2 and C3.3) the PBCCC, as a minimum includes the following members:

- two representatives from the Applicant (NSW Ports) approved by DPIE;
- one representative from Bayside Council, approved by DPIE;
- at least three representatives from the local community, approved by DPIE, and
- independent chairperson approved by DPIE.

The PBCCC meets at least four times each year to review and provide advice on the environmental performance of the Patrick terminal, including any construction or environmental management plans, monitoring results, audit reports or complaints.

4.7.1 Statutory Requirements and Legislative Framework

The legislation that applies to the implementation of this section of this OEMP is listed below:

Table: 4.7.1.1: Statutory Requirements and Legislative Framework

Statutory Requirements and Legislative Framework	
• *Environmental Planning and Assessment Act 1979 (NSW)*	
Development Consent DA 494	C3.2 and C3.3, (B3.2)
Development Consent DA 453	NA
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
EIS Prediction & Conclusion	NA

4.7.2 Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 4.7.2.1: Community Consultation Management – Key Tasks and Responsibilities

	Task	Responsibility
1	Attend the quarterly PBCCC meeting as the Patrick Representative.	HSE Manager
2	Provide the PBCCC with regular information on the environmental performance and management of the Patrick Terminal.	HSE Manager
3	Record PBCCC meeting minutes and make available on the NSW Ports website within 14 days of the meeting, or as agreed with the PBCCC.	3rd party, NSW Ports
4	Provide details of any Port rail noise reported within the Port Botany Expansion site for discussion by the PBCCC and relevant stakeholders.	NSW Ports, PBCCC
5	Provide a copy of the PBCCC meeting and any responses to the PBCCC's recommendations to the DPIE within one month of each meeting.	NSW Ports

4.7.3 Monitoring and Reporting

4.7.3.1 PBCCC Meeting Minutes

NSW Ports displays the minutes of the PBCCC Meeting on the NSW website - https://www.nswports.com.au/community-and-environment-hub/consultative-committees/port-botany/

4.7.3.2 Audit, Monitoring, Management and Reporting Documents

Audit, monitoring, management and reporting documents required under DA 494 and EPL 6962 are made publicly available on the Patrick website.

4.7.3.3 Corporate Procedure

Communication requirements have been documented within the Patrick HSEMS in **PAT_HSE_PRO_08_001 - Communication, Consultation & Participation Procedure**.

4.7.4 Performance Expectations

The implementation of this section of this OEMP and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 4.7.4.1: Port Botany Community Consultation Committee – KPIs

	Key Performance Area	KPI
1	Patrick's representative responsible for environmental management attend the PBCCC quarterly (3-monthly) meetings.	Quarterly
2	Public comments, inquiries or complaints from the public, which can be attributed to Patrick's operations.	Zero (0)

4.8 Emergency Preparedness and Response

4.8.1 Causes of Potential Environmental Emergencies

The following emergencies are considered possible at the Terminal:

- Fire where flammable goods are stored on site
- Chemical or hydrocarbon leak or spills
- Flooding

4.8.2 Emergency Response Plan

An **Emergency Response Plan (PBT_HSE_PLN_09_01)** has been developed for the Terminal which addresses the major risks associated with the terminal operations. The Emergency Response Plan (ERP) outlines procedures that should be followed in the case of a number of emergency scenarios. This OEMP includes Section 6.5 – Dangerous Goods and Hazardous Chemical

The ERP includes site maps indicating assembly areas and location of emergency equipment; emergency and after hours contact information; and access to a list of Dangerous Goods stored at the site at any one time.

A copy of the Port Botany Terminal's ERP is available on the Patrick website:

https://patrick.com.au/about/safety-and-environment/

Emergency management processes are documented in Patrick's HSEMS **PAT_HSE_PRO_09_001- Emergency Management Procedure**.

Included in **Section 6.5 – Dangerous Goods and Hazardous Chemicals/Substances** of this OEMP, are the safe operating procedures for the handling and storage of dangerous goods in shipping containers transiting the terminal.

4.8.3 Pollution Incident Response Management Plan (PIRMP)

The requirements of the EPA's Pollution Incident Response Management Plan (PIRMP) have been integrated into the terminal's **Emergency Response Plan (PBT_HSE_PLN_09_01).**

5. REVIEW AND IMPROVEMENT

5.1 Review

Conditions of Approval (DA 453, 6.5) dictate the OEMP and its management plans (Section 6) are required to be formally reviewed three-yearly.

5.2 Management Review

As per the **HSE System Auditing & Management Review Procedure (PAT_HSE_PRO_07_001)** completion of the annual HSE Management System internal audit shall trigger a management review of the Patrick HSESM including **Environment and Sustainability** (**PAT_HSE_PRO_11_001),** in order to determine its continuing suitability, adequacy and effectiveness. The Management Review will include, as a minimum, the Terminal Manager, HSE Manager and Nat. ECS Manager.

5.3 Improvement

5.3.1 Alignment to AS/NZ ISO 14001:2015 Environmental Management Systems

This OEMP has been designed to align with *AS/NZ ISO 14001:2015 Environmental Management Systems – Requirements with guidance for use*. **Table 5.2.1** below shows the relationship between AS/NZ ISO 14001:2015 and this OEMP.

Table: 5.3.1: OEMP Alignment with AS/NZ ISO 14001:2015 Environmental Management Systems

AS/NZ ISO 14001:2015 Environmental Management System		Patrick Port Botany Terminal OEMP	
Section #	**Title**	**Section #**	**Title**
4.0 - CONTEXT OF THE ORGANISATION			
4.1	Understanding the organisation and its context	1	Introduction
4.2	Understanding the needs and expectations of interested parties	4.1	Stakeholder Identification and Consultation
4.3	Determining the scope of the Environmental Management System (EMS)	2.5	HSE Management Framework
4.4	EMS	2	Planning
5.0 - LEADERSHIP			
5.1	Leadership and commitment	2.1	Corporate Objectives and Targets
		2.4	HSE Policy
5.2	Environmental policy	2.4	HSE Policy
5.3	Organizational roles, responsibilities and authorities	4.2	Environmental Duties and Responsibilities
6.0 - PLANNING			
6.1.1	Actions to address risks and opportunities - General	2.2	Environmental Aspects and Impacts / Risk Assessment

AS/NZ ISO 14001:2015 Environmental Management System		Patrick Port Botany Terminal OEMP	
Section #	**Title**	**Section #**	**Title**
6.0 - PLANNING *continued*			
6.1.2	Actions to address risks and opportunities - Environmental aspects	6	Environmental Management Plans, **Environmental Risk Register (PBT_HSE_REG_11_01)**
6.1.3	Actions to address risks and opportunities - Compliance obligations	2.3	Legislative Framework, **Patrick HSEMS Legal Compliance Register (PAT_HSE_REG_03_001)**
6.1.4	Actions to address risks and opportunities - Planning action	6	Environmental Management Plans, **Patrick HSEMS Environmental Risk Register (PBT_HSE_REG_011_01)**
6.2	Environmental objectives and planning to achieve them	2.1	Corporate Objectives and Targets
7.0 - SUPPPORT			
7.1	Resources	4.2	Environmental Duties and Responsibilities
7.2	Competence	4.3	Environmental Induction and Training
7.3	Support - Awareness		
7.4	Communication	4.7	Community Consultative Committee
7.4.2	Internal communication	5	Review and Continuous Improvement
7.4.3	External communication	4.6	Public Inquiry, Comment and Complaint Handling
7.5	Documented information	4.4	Environmental Reporting
8.0 - OPERATION			
8.1	Operational planning and control	6	Environmental Management Plans
8.2	Emergency preparedness and response	4.8	Emergency Preparedness and Response
9.0 - OPERATION			
9.1.1	Monitoring, measurement, analysis and evaluation	5	Review and Improvement
9.1.2	Evaluation of compliance	4.5	Environmental Inspection and Auditing
9.20	Internal audit		
9.30	Management review	5.2	Management Review
10.0 - IMPROVEMENT			
10.1	General	5	Review and Continuous Improvement
10.2	Nonconformity and corrective action		
10.3	Continual improvement		

5.2.2 Inspections and Internal/External Audits

Periodic environmental inspections and internal/external audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing,** of this OEMP.

6. ENVIRONMENTAL MANAGEMENT PLANS

Included in this OEMP are twelve (12) Management Plans (refer to Table 6 below) which address the key environmental issues identified for the site and provides information for managing them effectively. These Management Plans provide operational and maintenance personnel information about the impact their work / tasks may have on the local environment. The Plans address the requirements of legislation, licences and approvals.

This section details the environmental management plans for each of the identified actual/potential issues identified that are associated with Patrick's operations.

The environmental management plans address each of the following sections:

- Objective;
- Statutory Requirements and Legislative Framework;
- Responsibilities;
- Operational Environmental Aspects, Impacts and Control Measures;
- Monitoring and Reporting;
- Performance Expectations; and
- Review and Improvement.

Table: 6: List of Environmental Management Plans

Section No.	Title	Abbreviation
6.1	Air Quality Management Plan	AQMP
6.2	Stormwater Management Plan	SWMP
6.3	Feral Animal Management Plan	FAMP
6.4	Waste and Wastewater Management Plan	WWMP
6.5	Dangerous Goods and Hazardous Chemicals / Substances Management Plan	DGHCSMP
6.6	Operational Noise Management Plan	ONMP
6.7	Operational Traffic Management Plan	OTMP
6.8	Aviation Operational Impacts Management Plan	AOIMP
6.9	Bird Hazard Management Plan	BHMP
6.10	Vegetation and Land Management Plan	VMP
6.11	Energy and Resources Management Plan	ERMP
6.12	Biosecurity and Customs (unpack containers) Management Plan	BCMP
6.13	Sustainability Management Plan	SMP

6.1 Air Quality Management Plan

Objective
To avoid, control or minimise emissions to the atmosphere caused by rising dust, vehicles/plant, or noxious fumes/odours.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Environmental Planning and Assessment Act 1979 (NSW)* • *Protection of the Environment (Operations) Act 1997 (NSW)* • *Protection of the Environment Operations (Clean Air) Regulation 2010 (NSW)* • *NPI National Environment Protection Measure (NPI NEPM)* • *National Greenhouse and Energy Reporting Act 2007 (NGERS) (Cth)*

Development Consent DA 494	C2.1, C2.2, C2.3 & C2.4
Development Consent DA 453	3.45, 3.46, 3.47, 3.48 & 7.16
EPA Licence 6962	O3.1
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	23.8.2

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in section 4.2 of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.1.1: **Air Quality Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors/service provider and visitors.	Training Coordinator and/or HSE Manager, Facilities Manager
2	Maintain operational mobile plant / vehicles	Maintenance personnel - Technical Specialists, Relevant contractors/service providers
3	Check each item of mobile plant prior to use.	Mobile Plant Operators / employees
4	Arrange air monitoring and a review of the effectiveness of controls.	HSE Manager
5	Monitor air quality, and report results.	Independent external air quality consultant
6	Analyse air quality samples and provide data to client.	NATA accredited third-party laboratory
7	Manage corrective actions.	HSE Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Two self-bunded 67,120 L diesel 'Transtanks' and a bunded decanting bay.	 
2	Diesel trans-tanks – relief valves and filters	

Operational Environmental Aspects and Impacts, and Control Measures	
Emissions to atmosphere are generated from the following sources:	
1	Emissions from plant, machinery and equipment
2	Spray painting
3	Fugitive emissions and odours from on-site diesel fuel storage
4	Fugitive emissions and odours from hazardous/DG shipping containers / tank-tainers
5	Dust from unsealed areas of the site
6	Odours / dust from unsealed areas surrounding the site (e.g. sandpiles)

Table: 6.1.2: Air Quality - Operational Environmental Aspects and Impacts, and Control Measures		
1	**Emissions from operational mobile plant, machinery and equipment**	
Operational Environmental		
Aspect	**Impacts**	**Control Measures**
The general operation of the Terminal includes the use of mobile plant (quay cranes, AutoStrads, reach stackers, forklifts, elevated work platforms) and vehicles (utes, mini bus, ITV trucks)	Emissions to air causing pollution; Health issues	Emission control devices are fitted by the manufacturer to mobile plant and vehicles.
		Ongoing use of these devices are checked by the person operating the mobile plant as part of the pre-start check and if found to be inoperable reported to Maintenance who will arrange inspection / repairs accordingly.
		Preventative maintenance is carried out at scheduled intervals (via Maximo) to ensure the manufacturer-fitted emission control devices or systems are working adequately.
		The site is predominantly covered with hardstand, reducing the risk of dust impacts.
		Mobile plant, vehicles and machinery are operated efficiently in accordance with their specifications. Unnecessary idling will be minimised.
		Periodic air monitoring for diesel particulate matter (DPM) and gaseous by-product (fume) is conducted by a certified Occupational Hygienist.
2	**Spray painting**	
Operational Environmental		
No spray painting is conducted on site, the upgraded Maintenance workshop does not include a spray booth.		
Aspect	**Impact**	**Control Measures**
Spread of paint	Emissions to air causing pollution; Health issues including visual impairment	Painting will be conducted with a paint brush or roller. Alternatively, the equipment will be removed from the terminal and spray painted at an offsite location. On the rare occasion spray painting is required a contractor will be engaged to perform the task and a job specific (risk) assessment will be conducted to identify the risks and the controls to mitigate the risks.

3	Fugitive emission and odours from on-site diesel fuel storage	
Operational Environmental		
Two adjacent above ground diesel tanks have a vent system to allow diesel fumes to vent from the tank, these odours are not expected to impact the local air quality.		
Aspect	**Impact**	**Control Measures**
Fugitive emissions and odours from on-site diesel fuel storage	Emissions to air causing pollution; Potential health impacts.	Vents/breather pipes are positioned at the top of the diesel storage tanks, away from workers, and fitted with filters to prevent contamination of the fuel. These filters also help to minimise odour impacts.
		Diesel storage tanks are fully contained, reducing potential impacts related to fugitive emissions.
		Diesel tanks are located within the Terminal away from the site boundary allowing for any diesel odours vented from the tank(s) time to have dissipated before they are carried beyond the boundaries of the Terminal.
4	**Fugitive emissions and odours from hazardous / dangerous goods containers / tank-tainers (i.e. relief valves)**	
Operational Environmental		
Hazardous substances and Dangerous Goods (DGs) are usually shipped in sealed shipping containers. Some are stored in vented tank-tainers with relief valves so that fumes do not accumulate and over pressurise the storage vessel.		
Aspect	**Impact**	**Control Measures**
Fugitive emissions and odours from hazardous / dangerous goods containers / tank-tainers (i.e. relief valves)	Emissions to air causing pollution; Potential health impacts, Property damage	Aboard vessels, shipping containers / tank-tainers containing hazardous/dangerous goods are placed in designated locations. Routine inspections are carried out by the ship's crew.
		In the Auto Yard, shipping containers / tank-tainers containing hazardous/dangerous goods are placed in the Auto Yard located in the centre of the Terminal, separated from the boundary by internal roads, Maintenance workshop and the quay line / Brotherson Dock.
		In the event of a spill/leak of hazardous substances or dangerous goods, odours may be controlled by the application of absorbent materials which stabilise the leaked/spilled liquid. The Terminal has a spill trailer onto which a leaking container can be placed and relocated to an area providing the necessary exclusion zone, away from workers and residential receptors.

5	Dust from unsealed areas of the site	
Operational Environmental		
Dust emissions are not anticipated from operational activities; however, controls have been identified to mitigate risks from trucks exiting the site with debris from Maintenance operations (e.g. resurfacing the Auto Yard surface).		
Aspect	**Impact**	**Control Measures**
Spread of debris and dust from trucks exiting the site	Emissions to air causing pollution; Health issues including visual impairment	Sweeping the quay line/wharf, Truck Grid and roadways are routinely carried out on the Terminal to reduce build-up of debris and dust. The Facilities Manager arranges a road sweeper to regularly sweep these work areas.
		Material that is excavated is managed by the assigned Project Manager to ensure it is covered and remove from site as soon as practicable. Use a dust suppressant if necessary. Routinely inspect the area and where required engage a road sweeper to clean the area.
		Regular visual environmental inspections of the Terminal to verify that control measures are in place and functioning correctly and to identify any air quality issues or the presence of any deposited dust / debris.
		Specific trucks removing debris from site are covered prior to exiting the Terminal. The Project Manager will check the internal and external roadways (e.g. Ramp A) to ensure if any debris on the roadway(s) to arrange a road sweeper to clean up immediately.
6	**Odours / dust from unsealed areas surrounding the site (e.g. sandpiles)**	
Operational Environmental		
Dust / odour emissions are not anticipated from operational activities. However there have been occasions whereby Patrick workers have raised dust at the truck grids and an unpleasant odour has been reported.		
Aspect	**Impact**	**Control Measures**
Odours / dust from unsealed areas surrounding the site (e.g. sandpiles)	Emissions to air causing pollution; Health issues including visual impairment	Hutchison Ports sandpile behind The Knuckle will be managed by SCTIL. While dust is not anticipated from operational activities, dust may be generated through the actions of wind erosion on the sandpile (located at the rear of Berth 6). Hutchison applies a dust suppressant to the sandpile. Where applicable, the HSE Manager will report any concerns about dust to the Senior HSEQ Manager at Hutchison.
		Where an odour is located and unidentifiable, Maintenance is to be contacted and ask to investigate. If the source of the odour is unable to be located on site, contact Sydney Water and/or NSW Ports.

Monitoring and Reporting

Given Patrick's location surrounded by other industrial and port industries, roadworks, and construction areas, it is difficult to isolate Patrick's contribution to air emissions from other local sources.

Routine monitoring relies on regular visual inspections and the diligence of all employees and contractors to identify odours and dust sources within the terminal and report them to their frontline manager who will raise an event in the Patrick's HSE reporting database (NOGGIN). Details of these events will be entered into the site's **Public Comments/Inquiries/Complaints Register (PBT_HSE_REG_11_02),** the results analysed and where necessary subsequent corrective actions proposed by the HSE Manager.

Events are reported at least weekly by the HSE Manager who will periodically report on any trends. The results will be used for various reporting obligations - refer to **Section 4.4 - Environmental Reporting,** of this OEMP.

Air monitoring will be carried out using an independent external air quality consultant if and when required.

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.1.3: **Air Quality Management – KPIs**

Key Performance Area		KPI
1	Public comments, inquiries and complaints from residents or members of the community – which can be attributed to Patrick's operations.	Zero (0) complaints
2	Routine visual inspections of the terminal to verify control measures are in place and functioning correctly and to identify any air quality issues of the presence of any deposited dust.	Monthly visual inspection (12 annually)
3	Implementation of corrective actions following a non-conformance in relation to dust/debris mitigation controls.	Road sweeping to be carried out within 2 weeks
4	Air monitoring carried out as per HSE monitoring program.	As per schedule
5	Dust and odour complaints expressed as the number of community complaints per 100,000 TEU.	Zero per 100,000 TEU

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting, Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing,** of the OEMP.

6.2 Stormwater Management Plan

Objective
To minimise the potential for activities conducted at the Terminal to negatively impact the local stormwater system and receiving waters, i.e. Botany Bay or Penrhyn Estuary; and to facilitate compliance with Conditions of Approval related to stormwater management. Note: Waste from ships, and wastewater (i.e. industrial (trade) waste) is managed separately, refer to **Section 6.4 - Waste and Wastewater Management Plan** of this OEMP.

Statutory Requirements and Legislative Framework	
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Environmental Planning and Assessment Act 1979 (NSW);* • *Protection of the Environment (Operations) Act 1997 (NSW), Section 120 Prohibition of pollution of waters*	
Development Consent DA 494	C2.14 and C2.15
Development Consent DA 453	3.26, 3.27, 3.28, 3.29, 3.30, 3.31, 3.32, 3.33, 3.34, 3.35 Note1, 3.36 Note1, 3.37, 5.1, 5.2, 5.3, 5.4 Note1, 5.5, 5.6, 5.7 Note1, 6.2 (a) & 6.4 (a) (Note1 Includes the specific details of the EPL applicable at the time, since then the EPL has had several revisions and changed.)
EPA Licence 6962	L1.1 (Note: EPL does not require specific stormwater monitoring)
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	16.4.2, 17.6.2, 18.4.2, 18.4.3, 18.5.2, 33.2.2, 33.3.2 & 33.5

Key Tasks and Responsibilities
A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 - Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.2.1: Stormwater Management – Key Tasks and Responsibilities

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors.	Training Coordinator, and/or HSE Manager; Facilities Manager
2	Maintenance of operational mobile plant / vehicles.	Technical Specialists; Relevant contractors/service providers
3	Check each item of mobile plant prior to use	Mobile Plant Operators / employees

	Task	Responsibility
4	Maintain of stormwater drains, Stormwater Quality Improvement Devices (SQIDs) i.e. Drain Wardens, Pronal OFR Anti-Pollution stoppers (plugs), Gross Pollution Traps (GPTs) and Puraceptors	Facilities Manager, Technical Specialists, Relevant contractors/service providers
5	Clean up after a leak/spill event.	Technical Specialists, Facilities Manager, Relevant contractors/service providers
6	Engage appropriate person to conduct rehabilitation of affected and/surrounding area in response to pollution incident, and ensure appropriate records are maintained on site.	HSE Manager
7	Leak or Fire event – direct designated personnel to CLOSE drain wardens located in stormwater drains.	Shift Manager (Chief Warden) – direct Technical Specialists, Facilities Manager, Relevant contractors/service providers, HSE Manager
8	Post Leak or Fire event after clean-up – OPEN drain wardens located in stormwater drains, report status to Chief Warden.	Shift Manager (Chief Warden), Technical Specialists, Facilities Manager, Relevant contractors/service providers

Stormwater Quality Improvement Devices (SQIDs)

As part of the Port Botany Expansion, and Redevelopment Projects – stormwater quality improvement devices (SQIDs) including, drain wardens (also known as drain safe units or pollution control baskets), Pronal OFR anti-pollution devices and gross pollution traps (GPTs) were installed in-situ according to the manufacturer's specifications. The following SQIDs are used at the site:

- Drain wardens (also known as drain safe units, pollution control baskets);
- Pronal OFR Anti-Pollution stoppers (plugs);
- Puraceptors; and
- Gross Pollution Traps (GPTs)

Stormwater Quality Improvement Devices (SQIDs) *continued*

Drain Wardens (i.e. drain safe units or pollution control baskets)

On site there is a first flush / containment system consisting of – eleven (11) north – south drains with grated pits at low points.

There are 29 drain warden units installed on site – in areas where there is a risk of contaminants entering the stormwater drains. Drain wardens help prevent contaminants from entering the waterway whilst still allowing water to flow through.

The drain warden operates in a similar fashion to a gross pollutant trap to effectively removes coarse sediments, litter, oil and debris from run off and from entering the storm water system.

Any particulate greater than *90microns will be trapped by the geotextile fabric prior to entering the stormwater drain. Runoff water entering the drain will tend to 'swirl' inside the drain warden, with hydrocarbons attracted to the hydrophobic boom made of polypropylene absorbent suspended beneath the grate to provide stormwater drain protection.

Pronal OFR Anti-Pollution Stoppers

Pronal OFR Anti-Pollution stoppers (plug) have been installed and fitted inside the trench drain along the front of the Truck Grids (lanes 1 to 31) with a SMC pneumatic control system located adjacent to Truck Grid Lane 1.

These plugs will be normally inflated within the trench stormwater drains to block stormwater flow away from the drains to Port Botany Bay. During periods with no or little rainfall (i.e. other than large rainfall events) the plugs are permanently inflated to redirect the stormwater along with any manage potential contaminates from spills into stormwater through the drainage system to the Puraceptors.

In an extreme rainfall event, the rainwater continues to flow into and along the trench drainage system to the Puraceptor, where it is treated as the first flush. After approximately 60 to 90 minutes of continuous rain Patrick's Technical Specialist will activate the SMC pneumatic control system, which deflate the balloons in the trench drain. The rainwater will flow along the drain passed the deflated balloon and is forced (redirected) along the stormwater drains to the wharf edge and into Port Botany Bay. After the extreme rainfall event has concluded the Technical Specialist returns to Lane 1 and deactivates the SMC pneumatic control system, which reinflates the balloons in the trench drain allowing the rainwater to flow along the trench drain to the Puraceptor.

Stormwater Quality Improvement Devices (SQIDs) *continued*

Puraceptors

Stormwater from the Refuel Bays, Straddle Parking Bays and Decanting Bays discharges into a single puraceptor stormwater storage and treatment device.

SPEL Puraceptor has two chambers, two vents, oil level alarms, a coalescer and is fitted with an automatic closure device specifically designed to treat and contain major oil spills. The first chamber is a containment/retention chamber where long retention time allows silt, sediments, sludge and gross pollutants to settle on the chamber's floor while the hydrocarbons rise to the surface. The flow

from the cleanest zone in the first chamber proceeds to the second separation chamber where the coalescing unit removes the finer globules of hydrocarbons, which reduces hydrocarbon content at the outlet below 5 mg/L The requirement of total petroleum hydrocarbon (TPH) concentration is approximately 10 mg/L for Environmental Protection Agency (EPA) 17 and 5 mg/L to BS EN 858.1 for Class 1.

Gross Pollution Traps (GPTs)

- **Berth 6 (The Knuckle) -** has a containment system consisting of - seven (7) east-west trench drains at pavement valley lines.
  - Each strip trench drain has four (4) low points which drain into the underground stormwater drainage system.
  - One (1) north-south trench drains along the western boundary. Stormwater drains connect into two (2) main 1800 mm north-south drains connected to the gross pollutant traps (GPT) which contain ECOSOL RSF 41800 Treatment Units.
- **Northern side of the SICTL site adjacent to Penrhyn Estuary -** includes outlets from six (6) stormwater drains from the Patrick site (i.e. Rail siding northern side of the rail line) have been fitted with a gross pollution trap (GPT). Patrick will liaise with SICTL to gain access to repair and maintain the gross pollution traps and stormwater drain pipes.

HumeCeptor® Stormwater Treatment System

There are approximately 5 to 7 HumeCeptor® stormwater treatment system located outside of the terminal's boundary to the North of the Patrick Rail Siding, and on land leased by Hutchison Ports.

The HumeCeptor ® stormwater treatment system slows incoming stormwater to create a non-turbulent treatment environment, allow free oils and debris to rise and sediment to settle. The system maintains a continuous positive treatment of total suspended solids (TSS), regardless of the flow rate, treating a wide range of particle sizes, as well as free oils, heavy metals and nutrients that attach to fine sediment.

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Drain warden device (under grate) at stormwater inlets	
2	Spill response kits	
2	Spill trailer - for the placement of a leaking shipping container	
3	Diesel trans tanks – receiving a delivery of diesel from a road tanker parked inside the bunded area	

Operational Environmental Aspects, Impacts and Controls	
Discharge to stormwater can occur from the following activities:	
1	Leaks from mobile plant, equipment and vehicles
2	Leaks from shipping containers (non-hazardous and/or hazardous/dangerous goods)
3	Leak/spill inside workshop
4	Leaks from diesel refuelling areas and/or tanks
5	Leaks from visiting trucks
6	Spill from a receptacle being transported on a Maintenance vehicle
7	Site runoff containing pollutants entering Botany Bay or Penrhyn Estuary
8	Spills/leaks from the workshop and maintenance area, including the wash bay

Table: 6.2.2: Stormwater - Operation Environmental Aspects, Impacts and Control Measures

1	**Leaks from mobile plant, equipment and vehicles**

Operational Environmental

The Terminal features a combination of mobile plant (quay cranes, AutoStrads, ARMGs, reach stackers, forklifts, elevated work platforms) and vehicles (utes, mini bus, ITV trucks. Leaks of fuel (diesel, ULP) or spills attributed the use of these assets at the Terminal can be expected to negatively impact the quality of nearby waterbodies unless adequate controls are in place.

Aspect	Impact	Control Measures
Leaks from mobile plant, equipment and vehicles	Pollution of water and/or sediment within Botany Bay or Penrhyn Estuary; Negative impacts on marine species; Reputational harm.	Prior to operating an asset, the operator checks that mobile plant is working correctly and not leaking as part of a pre-start checking procedure. If found to be leaking it is reported to Maintenance who will arrange inspection / repairs accordingly and deploy immediate clean up. Pre-start checks are recorded on a pre-start checklist and any rectifications are managed and recorded by the maintenance department in a timely manner.
		Stormwater control devices are located across the Terminal to reduce the risk of contaminated runoff entering Botany Bay or Penrhyn Estuary. Refer to, in this table, **Aspect 7 - Site runoff containing pollutants entering Botany Bay or Penrhyn Estuary** for details on these controls.
		Manual straddles no longer in use at the Terminal. The few that remain are parked in a bunded area behind the Maintenance workshop.

1	Leaks from plant, equipment and vehicles *continued*	
Aspect	**Impact**	**Control Measures**
Leaks from plant, equipment and vehicles	Pollution of water and/or sediment within Botany Bay or Penrhyn Estuary; Negative impacts on marine species; Reputational harm.	All stormwater treatment devices (including drainage systems, sumps and traps) are routinely inspected and maintained to ensure they remain in effective working order. The inspection and maintenance of stormwater quality improvement devices (SQIDs) such as drain wardens, Pronal OFR Anti-Pollution stoppers (plugs), gross pollution traps (GPTs) and Puraceptors is scheduled in the Maintenance scheduling system (Maximo) and the responsibility of the Maintenance Department.
		Stormwater treatment devices located outside the terminal's boundary i.e. 5 to 7 HumeCeptor® stormwater treatment systems have been located to the north of the Patrick rail siding on the Hutchison Ports side of the fence. These are been recently identified, a sampling and testing program is being established to determine if and what servicing is required by Patrick's Maintenance Department of these stormwater treatment devices.
		Any leaks or spills are reported immediately to Maintenance in accordance with **Emergency Response Plan (PBT_HSE_PLN_09_01)** and associated spill response procedures. Controls in place to reduce environmental impact from leaks/spills include: • Use of absorbent materials to stabilise the leaked/spilled liquid. • Drain wardens installed in stormwater drains are turned from the OPEN to the CLOSED position. Clean up of the affected area may include using either dry, or wet road sweepers with a high-pressure vacuum system to clean roadway and/or storage area surfaces.
		Spill kits are situated in key locations around the terminal and Patrick employees have been trained in the use of spill kits and incident response. Leaks/spills are quickly identified, contained and reported. A spill trailer is also available at the Terminal.

2	Leaks from shipping containers (non-hazardous and/or hazardous/dangerous goods)	
Operational Environmental		
Shipping containers are located in the container storage area, the wharf apron (during unloading), and aboard vessels. Shipping containers can sometimes contain dangerous goods in liquid form, which pose a risk of stormwater contamination in the event the container is compromised.		
Aspect	**Impact**	**Control Measures**
Leaks from shipping containers (non-hazardous and/or hazardous/ dangerous goods) entering Botany Bay	Pollution of water and/or sediment within Botany Bay; Negative impacts on marine species; Reputational harm.	In the event a shipping container is found leaking aboard a vessel, the Duty Shift Manager will enact the **Emergency Response Plan (PBT_HSE_PLN_09_01).** This may involve contacting NSW Fire & Rescue Hazmat to attend site. If the container is to be discharged and can be safely done the container will be transferred directly to the spill trailer. If the container is a through container (i.e. not to be discharged), it will remain on board.
		Terminal infrastructure includes provision of a first flush/containment system consisting of: • 11 north – south stormwater drains with grated entry pits. • Drain warden devices (i.e. pollution control baskets) fitted inside the stormwater drain under the grates.
		The following controls are in place at Berth 6 (the Knuckle). First flush / containment system consisting of: • Seven east-west trench drains at pavement valley lines. Each trench drain has four low points which drain into the underground stormwater drainage system. • One north-south trench drain, along the western boundary. • Stormwater drains connect into two main 1800 mm north-south drains connected to the gross pollutant traps (GPT). • GPTs contain ECOSOL RSF 41800 Treatment Units.
		Use of Pronal OFR Anti-Pollution stoppers (plugs) fitted with a SMC pneumatic control system is used along the trench stormwater drain in front of the truck lanes at the Truck Grid. These plugs will be normally inflated within nominated stormwater drains to block stormwater flow and therefore manage potential leaks/spills into stormwater. Prior to large rainfall events, the plugs will be deflated to facilitate flow through the system.

2	Leaks from shipping containers (non-hazardous and/or hazardous/dangerous goods) *continued*	
Aspect	**Impact**	**Control Measures**
Leaks from shipping containers (non-hazardous and/or hazardous/ dangerous goods) entering Botany Bay	Pollution of water and/or sediment within Botany Bay; Negative impacts on marine species; Reputational harm.	In the event of a leak or spill Maintenance personnel attend and apply absorbent materials which stabilise the leaked/spilled liquid. The Terminal has a spill trailer onto which a leaking container can be placed and relocated to an area providing the necessary exclusion zone, away from workers and residential receptors. Clean up of the affected area may include using a wet road sweeper with a high-pressure vacuum system. Before a leaking container is placed in the spill trailer the bottom valve is closed. After the leak has stopped or been controlled, and the container is removed from the spill trailer, any liquid or solid collected in the bottom of the spill trailer is emptied, cleaned and the wastewater disposed of via a licensed waste collector and disposed of appropriately **(Section 6.4 – Waste and Wastewater Management Plan).** Following the clean out the spill trailer is returned to service and the bottom valve opened to allow any rainwater to disperse.
3	**Leaks/spill inside the workshop**	
Operational Environmental		
Maintenance activities carried outside the workshop often involve filling reservoirs of oil etc which involve the risk of overflowing onto the ground and flowing outside of the workshop and into stormwater drain.		
Aspect	**Impact**	**Control Measures**
Spills of hydrocarbons from refilling operations inside the workshop entering the receiving environment – Botany Bay	Pollution of water and/or sediment within Botany Bay Negative impacts on marine species within Botany Bay; Reputational harm.	The drains inside the workshop (with the exception of the wash bay sump) are all blind i.e. closed off and do not drain outside of the workshop.
		The workshop is designed with a bunded wall, and at the doorways where there is no bunded wall the floor slopes towards the centre of the workshop.
		Drain wardens are installed in stormwater drains around the external perimeter of the Maintenance workshop.
		Spills/leaks are cleaned up immediately using absorbent material.

4	Leaks from diesel refuelling areas and/or tanks	
Operational Environmental		
Two 67,120 L diesel 'trans-tanks' (Fuel Farm) are located at the site next to the AutoStrad parking area at the eastern side of the terminal. The trans-tanks are self-bunded with two separate, internally bunded compartments. An external bund has also been constructed at the front of the tanks and is connected to a SPEL Stormwater Puraceptor / P.200.C1.2C (VTC) capable of treating stormwater at a rate of 200L/sec. The Puraceptor discharges directly to existing stormwater and through to Botany Bay.		
Aspect	**Impact**	**Control Measures**
Spills of hydrocarbons from fuel storage and refuelling areas entering the receiving environment – Botany Bay	Pollution of water and/or sediment within Botany Bay Negative impacts on marine species within Botany Bay; Reputational harm.	Whilst refuelling Maintenance personnel or contractors are required to remain with the job until it is completed.
		Preventative maintenance is carried out at scheduled intervals (via Maximo) to ensure the diesel refuelling equipment is operating adequately.
		An automatic cut-off is activated when the bowser is released, shutting off the flow of diesel.
		The decanting bay is fully bunded with discharge directed to a separate drain with an associated SPEL Puraceptor to contain and filter any leaks/spills that may occur.
		Runoff from the four refuelling bays is directed the SPEL Puraceptor.
		All stormwater treatment devices (including drainage systems, sumps and traps) are regularly maintained in order to remain effective. The inspection, service and maintenance of the Puraceptors is scheduled in Maximo and the responsibility of the Maintenance Department. Hard copy records are kept by the Maintenance Department.
		In the event of a leak or spill Maintenance will be alerted and attend to apply absorbent materials which will stabilise the leaked/spilled liquid. If required absorbent material will be placed around any nearby stormwater drains which if fitted with a Drain Warden, the grate will be lifted, and the device handle turned to closed. Clean up of the affected area may include using a dry or wet road sweeper with a high-pressure vacuum system.

5	Leaks from visiting trucks	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Spills/leaks of hydrocarbons from the truck grid or straddle park entering Botany Bay or Penrhyn Estuary; Grit and rubber from vehicle tyres entering Penrhyn Estuary or Botany Bay	Pollution of water and/or sediment within Botany Bay or Penrhyn Estuary; Negative impacts on marine species within Botany Bay or Penrhyn Estuary; Reputational harm	Patrick employees (e.g. Tele-Op, reach stacker driver) to ask the truck driver to stop and turn off the vehicle (so as not to spread the leaking material), contact the Yard or Shift Manager, or Maintenance's Technical Specialist.
		Spills or leaks that may enter stormwater drains are controlled via discharged to trench drains with stormwater treatment devices. In the event of the spill or leak has the potential to impact nearby waterbodies the nearby drain warden devices can be accessed by lifting the drain grate and the device handle turned to closed.
		Three Puraceptor stormwater storage and treatment devices are in place in the pavement area south of the rail siding and north of the container storage area including the truck grid, straddle park and fuel farm.
		The truck grid and straddle park are fully bunded and bunds maintained as part of the maintenance inspection program.
		All stormwater treatment devices (including drainage systems, sumps and traps) are regularly maintained in order to remain effective. The inspection, servicing and maintenance of drain wardens, Pronal OFR anti-pollution devices, Puraceptors and GPTs are scheduled in Maximo and the responsibility of the Maintenance Department.
		In the event of a leak or spill Maintenance will be alerted and attend to apply absorbent materials which will stabilise the leaked/spilled liquid. If required absorbent material will be placed around any nearby stormwater drains which if fitted with a Drain Warden, the grate will be lifted up and the device handle turned to closed. Clean up of the affected area may include using a dry or wet road sweeper with a high-pressure vacuum system. Following clean up any Drain Wardens which were closed, are returned to service and opened.

6	Spill from a receptacle containing liquid on a Maintenance vehicle	
Operational Environmental		
Chemicals and fuel are sometimes required to be transported across the Terminal by Maintenance personnel. For example, fuel or oil may be transported to service non-operational mobile plant. This movement of containers across the Terminal may or may not contain liquids which are classified as dangerous goods.		
Aspect	**Impact**	**Control Measures**
Spill from a container on a maintenance vehicle entering Botany Bay or Penrhyn Estuary	Pollution of water and/or sediment within Botany Bay or Penrhyn Estuary; and Negative impacts on marine species within Botany Bay or Penrhyn Estuary; Reputational harm.	Chemical or fuel containers requiring transport to non-workshop locations on the Terminal must be placed on the back tray of a light vehicle and adequately secured so that they cannot move or fall off the vehicle.
		In the event of a leak or spill Maintenance will be alerted and attend to apply absorbent materials which will stabilise the leaked/spilled liquid. If required absorbent material will be placed around any nearby stormwater drains which if fitted with a Drain Warden, the grate will be lifted up and the device handle turned to closed. Clean up of the affected area may include using a dry or wet road sweeper with a high-pressure vacuum system. Following clean up any Drain Wardens which were closed, are returned to service and opened.

7	Site runoff containing pollutants entering Botany Bay or Penrhyn Estuary
Operational Environmental	

Stormwater flows for up to a 1 in 100 ARI (Average Recurrence Interval) storm event, are prevented from entering adjoining premises by the creation of flow paths along grated trench drains. The roadway along the western boundary of the Terminal area provides an overland flow path at the western end of the trench drains to the quay line. The overland flow path at the eastern end of the trench drains is directed through the existing Cargolink Terminal to the quay line.

<u>Stormwater Catchment areas</u> – refer to Figure 6.2.1

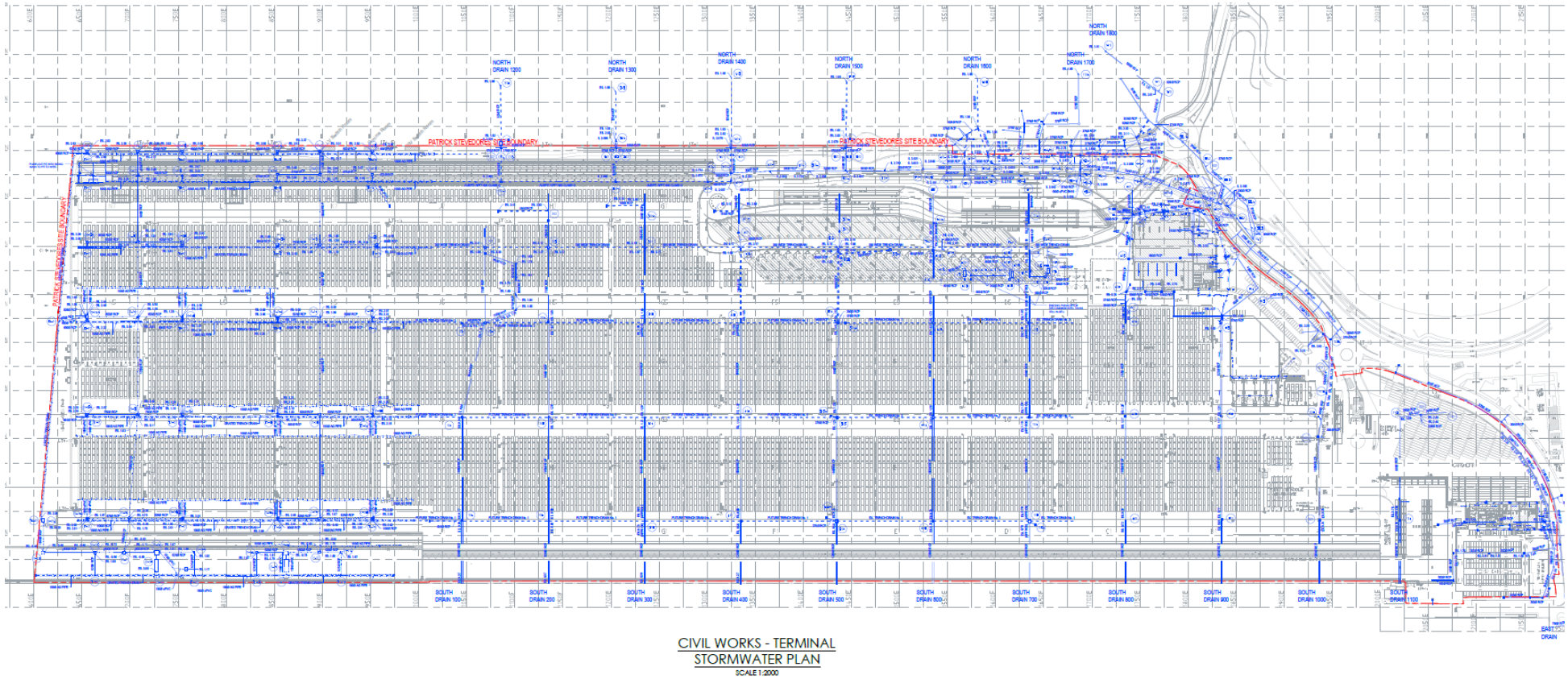
There are five (5) catchment areas on the Terminal with different types of stormwater management systems:

1. Pavement area north of the rail siding – drains to Penrhyn Estuary;
2. Pavement area south of the rail siding and north of the container storage area including the truck grid, AutoStrad parking area and diesel trans-tanks – drains to Botany Bay;
3. Pavement area west of the Maintenance area, including the AutoStrad parking area – drains Botany Bay
4. Container storage area, staff car parks and Tower/administration buildings – drains to Botany Bay; and
5. The Knuckle container storage area – drains to Botany Bay.

Aspect	Impact	Control Measures
Malfunction of the stormwater treatment system causing untreated stormwater to enter Botany Bay or Penrhyn Estuary	Pollution of water and/or sediment within Botany Bay or Penrhyn Estuary; and Negative impacts on marine species within Botany Bay or Penrhyn Estuary; Reputational harm.	Site runoff is directed to trench drains with associated SQIDs, including Drain Warden devices, SPEL Puraceptors and GPTs, where stormwater is treated prior to discharge to Botany Bay or Penrhyn Estuary.
		Stormwater treatment systems at the site include first flush / containment system consisting of: • 11 drains with grated stormwater pits at low points. • Drain Wardens (drains safe units / pollution control baskets) within the stormwater drains.
		First flush / containment system consisting of: • Seven trench drains at pavement valley lines. • One trench drain along the western boundary. • Stormwater drains connect into two main 1800 mm north-south drains (Botany Bay) connected to the gross pollutant traps (GPT) which contain ECOSOL RSF 41800 Treatment Units. • Stormwater drains connected to south-north drains (Penrhyn Estuary) connected to the gross pollution traps which contain ECOSOL RSF 41800 Treatment Units.
		Stormwater drains are marked with “Clean Rainwater Only”.
		Stormwater drains with Drain Warden devices installed under the grate are marked with which direction to open or close the device.
		All stormwater treatment devices (including drainage systems, sumps and traps) are regularly serviced and maintained in order to remain effective. The inspection and maintenance of stormwater drain wardens, Pronal OFR anti-pollution devices, Puraceptors and GPTs are scheduled in Maximo and the responsibility of the Maintenance Department. Hard copies of the inspection, servicing and any repairs are kept by the Maintenance Department.
		In the event of a leak or spill Maintenance will be alerted and attend to apply absorbent materials which will stabilise the leaked/spilled liquid. If required absorbent material will be placed around any nearby stormwater drains which if fitted with a Drain Warden, the grate will be lifted up and the device handle turned to closed. Clean up of the affected area may include using a dry or wet road sweeper with a high-pressure vacuum system. Following clean up any Drain Wardens which were closed, are returned to service and opened.

Figure: 6.2.1: Patrick Terminal Stormwater Catchment Areas

Figure: 6.2.2: Patrick Terminal Stormwater Drainage System



Monitoring and Reporting

Stormwater treatment devices are monitored by the Engineering and Maintenance Department according to testing and inspection schedules in Maximo. Implementation of this program helps to ensure the ongoing operation and effectiveness of these devices in protection against stormwater pollution.

Patrick will ensure appropriate persons are engaged to conduct remediation and rehabilitation works if required in response to a pollution incident. Monitoring of the effectiveness of rehabilitation programs will be conducted as required by specialist recommendations. Records of clean up and rehabilitation activities in response to a pollution incident will be maintained on site and available for review by regulatory bodies if and when required.

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.2.3: **Stormwater Management – KPIs**

	Key Performance Area	KPI
1	An incident on site where a pollutant has entered water.	Zero (0)
2	Public inquiries, comments and complaints from residents or members of the community – which can be attributed to Patrick's operations.	Zero (0)
3	Routine visual inspections of the terminal to verify control measures are in place and functioning correctly and to identify any potential sources of stormwater contamination.	Al least quarterly visual inspection (4 annually)
4	Implementation of corrective actions following a non-conformance in relation to dust/debris mitigation controls.	Water and high-pressure vacuum cleaning arranged promptly

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting**, **Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing,** of this OEMP.

6.3 Feral Animal Management Plan

Objective
To reduce the risk of attracting feral animals to the Terminal by the implementation of appropriate controls.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *NA*

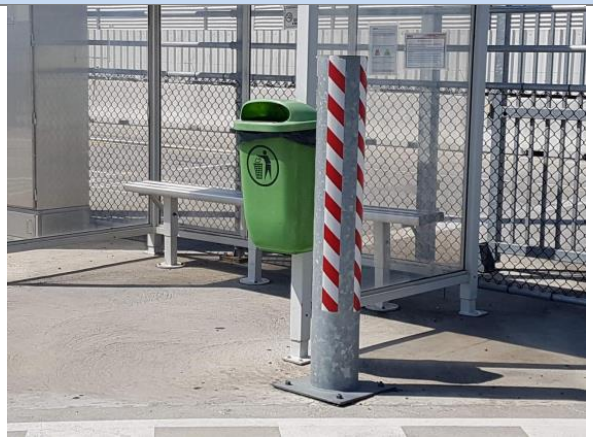
Development Consent DA 494	NA
Development Consent DA 453	NA
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	20.8.4

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 - Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.3.1: **Feral Animal Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors.	Training Coordinator and/or HSE Manager; Facilities Manager
2	Maintain good housekeeping within the Terminal.	All Patrick personnel; Truck drivers; Relevant contractors/service providers; Facilities Manager
3	Monitoring of feral animal management impacts and their effectiveness.	HSE Manager
4	Liaise with NSW Ports, Port Authority NSW and other port operators for feral animal management.	HSE Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Litter bins are placed around the site - along the truck grid at each of the bus shelters, and at the Operations vehicle parking area	
2	Rodent trap located around the site	

Operational Environment Aspects and Impacts, and Control Measures	
1	Feral Animal attractants
2	Pest control at the terminal e.g. rodents, insects, pigeons

Table: 6.3.2: Feral Animal Operational Environment Aspects, Impacts and Control Measures

1	**Feral Animal Attractants**	
Operational Environment		
Aspect	**Impact**	**Control Measures**
Feral Animal attractants	Health; Nuisance; Property damage	Rubbish bins are in placed across the Terminal and appropriately covered at all times.
		Rubbish bins are regularly emptied, and the waste disposed of by approved contractors/service providers.
		Security personnel conduct regular patrols of the Terminal boundary and fencing.
		Employees/contractors directed not to feed stray/feral animals.
		Should shorebird monitoring reveal feral cat and fox predation (on shorebirds) to be an ongoing issue, a 1080 fox baiting program should be initiated in consultation with NPWS and an expert shorebird ecologist.
2	**Pest Control**	
Operational Environment		
Aspect	**Impact**	**Control Measures**
Pest control e.g. rodents, insects, pigeons	Health; Nuisance; Property damage	Rubbish bins are in placed across the Terminal and appropriately covered at all times.
		Rubbish bins are regularly emptied, and the waste disposed of by approved contractors/service providers.
		Security personnel conduct regular patrols of the Terminal boundary and fencing, report any holes to the HSE Manager and Facilities Manager to arrange repairs.
		Pest control practices carried out by approved contractors/service providers e.g. rodent baits, pigeon deterrents.
		Arrange immediate clean-up of any spills of grains (i.e. leaking container).

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.3.3: **Feral Animal and Biosecurity Management – KPIs**

	Key Performance Area	KPI
1	An incident on site where a feral animal is found.	Zero (0) complaints
2	Public comments, inquiries and complaints from residents or members of the community related to feral animals or a biosecurity threat – which can be attributed to the Terminal.	Zero (0) complaints
3	Routine visual inspections of the terminal to verify control measures are in place and functioning correctly and to identify housekeeping practices which may attract feral animals.	Al least quarterly visual inspection (4 annually)
4	The number of feral animal management events per 100,000 TEU.	Zero per 100,000 TEU

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting, Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing,** of this OEMP.

6.4 Waste and Wastewater Management Plan

Objective
To effectively manage waste and wastewater (industrial trade waste) at the Terminal in accordance with the waste hierarchy and the site's Trade Waste Agreement (TWA) and Trade Wastewater Discharge Schedule; and to ensure hazardous waste is managed in accordance with legislative requirements.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Environmental Planning and Assessment Act 1979 (NSW)* • EPA Waste Classification Guidelines Part 1 Classifying Waste (2014) • *Marine Pollution Act 2012 (NSW)* • *Protection of the Environment Operations Act 1997 (NSW)* • *Protection of the Environment Operations (Waste) Regulation 2014 (NSW)* • *Sydney Water Act 1994 (NSW)* • *Waste Avoidance and Resource Recovery Act 2001 (NSW)* • Waste Classification Guidelines, Part 1: Classifying Waste 2014 (NSW EPA)

Development Consent DA 494	C2.13, C2.13A, C2.14 & C2.15
Development Consent DA 453	3.38, 3.39, 3.40, 3.41, 3.42, 3.43, 3.44, 6.4 (d), 7.5, 7.21, 7.22, 7.23 & 7.24
EPA Licence 6962	L2.1, L2.1, L2.3 & L2.4; & O1.1, O4.1 O4.2
Sydney Water Discharge Industrial Wastewater Consent 24990	Schedule 1
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	Items 1 to 13
EIS Prediction and Conclusion	33.2, 33.3, 33.5 & 33.4

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.4.1: **Waste and Wastewater Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors	Training Coordinator and/or HSE Manager; Facilities Manager
2	Use licenced waste transporters to collect waste and dispose at appropriately licenced disposal facilities.	Facilities Manager; Relevant contractors/service providers
3	Maintain a list of approved waste transporters and disposal facilities.	HSE Manager
4	Routinely inspect waste storage areas at the Terminal.	HSE Manager
5	Maintain the waste register and analyse waste generation and recycling data.	HSE Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Grease Arrester Pit (Trade Wastewater Discharge Schedule, Permit No. 40110) collects greasy wastewater from the Canteen/Kitchen – the Sydney Water Wastesafe barcode is located on the post above the pit. The grease trap is cleaned 6-monthly by a licensed waste transporter. The grease and sludge are disposed at a suitably licensed waste treatment or disposal facility.	 
2	General waste bin, Maintenance workshop	

#	Description	Photo
3	Waste bins for used oil rags, Maintenance workshop	
4	Used batteries, collected at Maintenance for recycling	
5	General waste bins	 

#	Description	Photo
6	Paper and cardboard recycle bins in office areas	
7.1	Wastewater from the wash bay drains into a sump located in the centre of the wash bay floor. Any collected oil and debris are pumped out and placed into a 200L drum for ultimate disposal at a licenced disposal facility.	
7.2	Wastewater from the wash bay is piped across to the concrete storage pit where the wastewater is passed through an under and overs oil separator. A licenced contractor pumps the sludge from the pit into a tanker where it is transported to a licensed treatment or disposal facility.	

#	Description	Photo
7.3	Wastewater is pumped from the concrete storage pit to the Auto Batch unit and treated with a flocculent to reduce suspended solids. Filter paper laid on a moving conveyor belt aids in further removal of fine particles. The used flocculent and filter paper is collected in a undercover waste bin, and the filtered wastewater is collected in a 1000L tank.	 
7.4	Filtered wastewater is pumped from the 1000L tank through a flow meter transducer to measure the volume of water discharged to sewer. The flowmeter is calibrated annually.	

Identification of Waste Streams

The table below provides a summary of the types of wastes generated at the Terminal. All waste at the Terminal is classified into one of five categories according to guidance provided in the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste 2014. The majority of waste is classified as General Solid Waste (non-putrescible) and General Solid Waste (putrescible). Smaller quantities of 'Special Waste', Liquid Waste' and 'Hazardous Waste' are generated.

Table 6.4.2: Summary of the Types of Waste Generated at the Terminal

Waste Classification	Description
Liquid Waste	Wastewater sludge is collected in a sump located in the centre of the wash bay floor
	Wastewater from the wash bay passes through an under/overs separator, and the wastewater is filtered prior to discharge to sewer under licence (Trade Waste Agreement)
	Grease Arrester Pit i.e. waste oil (Canteen / Kitchen cooking oil) (Trade Wastewater Discharge Schedule)
	Liquid waste from stormwater drain warden devices
	Liquid waste collected in the spill trailer from leaking DG containers
General Solid Waste (putrescible)	Kitchen waste (food scraps, wrappers, paper towels etc.)
General Solid Waste (non-putrescible)	Glass and plastic containers
	Paper and cardboard
	Scrap metal
	Used parts with non-recyclable content (maintenance)
	Timber pallets / crates
	Solid waste from stormwater drain warden devices (grit, sediment, litter)
	Green waste (vegetation)
Hazardous waste	Waste oil (Maintenance)
	Oily rags
	Used oil filters
	Used absorbent material to clean up leaks/spills
	Ink/toner cartridges, fluorescent light tubes
	Used cleaning chemicals, paints, thinners, pest control chemicals, and their empty containers
	Waste fuel and empty fuel drums
	Used absorbent material (ex-leak/spill clean-up)
	Lead-acid / nickel cadmium batteries
	Ink/toner cartridge (ex-printers)
Special waste	Asbestos
	Waste tyres (ex-mobile plant and/or vehicles)
	Clinical waste (sharps etc.) from First Aid Room

Operational Environment Aspects and Control Measures	
1	Generation of waste across the Terminal
2	Grease/oil from Canteen/Kitchen collected in a Grease Arrester Pit
3	Maintenance wash bays and a manually operated sump to remove sludge
4	Hazardous and Liquid Waste Management
5	Handling of solids / liquid wastes collected from Stormwater Quality Improvement Devices (SQIDs)
6	Special waste and biohazard waste
7	Waste from ships berthed alongside the Patrick Terminal (not applicable to Patrick)

Table: 6.4.3: Waste and Wastewater - Operation Environmental Aspects, Impacts and Control Measures

1	**Generation of waste across the Terminal**	
Operational Environment		
Aspect	**Impact**	**Control Measures**
Generation of waste across the Terminal; Failure to implement the waste hierarchy; Inappropriate disposal methods	Depletion of natural resources; Reduction in available landfill space; Litter; Pollution of stormwater or nearby waterbodies; Land contamination; Reputational harm; Breach of waste legislation	Patrick will endeavour to manage the waste generated on site by following the best practises - *Waste Avoidance and Resource Recovery Act 2001*: Avoid, Reduce, Reuse, Recycle, Recover, Treat; and Dispose. Patrick's preference is to avoid/reduce waste wherever possible, the waste minimisation program includes where possible: • tracking waste to identify trends and where set reduction targets; • incorporate information on waste classification and disposal into personnel training and communication material; • provide clear identification of separate waste stream disposal bins and/or locations; and • discuss waste minimisation during staff and contractor meetings.
		Before waste is removed from site, it is assessed by the waste contractor for suitability for the intended destination. Waste will be classified into the groups in Table 6.4.2 as per the EPA Waste Classification Guidelines.
		Designated waste storage areas are provided in and adjacent to the Maintenance workshop and building and the Tower/Administration Building. Wastes are stored according to their classification.
		Outdoor litter bins are designed as per - **Bird Hazard Management Plan, Section 6.9** of this OEMP.
		Recycling facilities are provided at the Terminal to maximise recycling of waste materials such as paper and cardboard, scrap metal, timber pallets, oily rags, waste oil, printer cartridges, batteries, tyres etc.
		Domestic waste is collected on a regular basis and transported off site for disposal to a licensed landfill.
		Patrick can accept a maximum of 5000 kL of in-transit waste generated outside the premises for storage only (EPL 6962, A1.1).
		Scrap metal, used parts, components and machinery from the maintenance workshop are recycled where practicable.

2	Generation of grease/oil from Canteen/Kitchen collected in a Grease Arrester Pit	
Operational Environment		
A grease arrestor pit (grease trap) is located near the canteen and treats wastewater from the canteen kitchen prior to discharge to sewer under the conditions of a Trade Wastewater Discharge Schedule (Permit No. 40110) with Sydney Water.		
Aspect	**Impact**	**Control Measures**
Generation of grease/oil from Canteen/Kitchen – inappropriate disposal	Negative impact to sewerage system; Reputational harm; Breach of Trade Wastewater Discharge Schedule	The grease trap is emptied and cleaned six-monthly by an approved contractor and licensed waste transporter in accordance with the conditions of the Trade Wastewater Discharge Schedule (Permit 40110). The waste transporter reports activity associated with the grease trap to Sydney Water on behalf of Patrick. The contractor scans the Wastesafe barcode before transporting the liquid waste for disposal at a licenced facility.

3	Maintenance wash bays and manually operated sump to remove sludge

Operational Environment

Two wash bays are located within a roofed and bunded area within the maintenance workshop with one wash bay connected via the Auto Batch unit to trade waste. The workshop floor is sealed and graded toward an internal drainage point into a sump which is periodically pumped out of sludge into 200L metal drums and disposed of using a licensed waste transporter, and disposal facility. This single wash bay is operated under the conditions of Sydney Water's Consent to Discharge Industrial Trade Wastewater No. 24990 (TWA). The second wash bay is not connected to the trade waste and has not been used since it was installed.

A program of routine monitoring, sampling and testing is required under the TWA and arranged by Sydney Water directly with a third-party environmental testing laboratory.

Maintenance personnel in the workshop use oils, lubricants, coolants, grease, fuel (diesel), paint (road marking and rust protectant), thinners and pest control chemicals which could find their way into the drainage system. Chemicals are also used for cleaning plant and equipment in the wash bay.

Aspect	Impact	Control Measures
Generation of wastewater from the single wash bay discharged to sewer; Spills/leaks from the workshop and maintenance area, entering Botany Bay or Penrhyn Estuary (e.g. hydrocarbons, grit and rubber from vehicle tyres, waste oil sludge)	Breach of the Trade Waste Agreement; Pollution of stormwater or nearby waterbodies; e.g. Botany Bay or Penrhyn Estuary; Negative impacts on marine species within Botany Bay or Penrhyn Estuary; Impacts on Sydney Water Trade Waste system; Reputational harm.	Wastewater from the wash bay drains through a floor sump and collects sludge. Periodically the sump is pumped out and appropriately disposed of using a licenced disposal facility. The wastewater from the wash bay flows into a concrete open tank where any oil is separated from the wastewater using an under/over separator. Any oil is separated and is ultimately removed using a licensed waste contractor. The wastewater is pumped up the Auto Batch unit and passed thru a powdered filter aid material on top of disposable filter paper on a moving conveyor belt. After the filtered wastewater is then collected in a 1000L batch tank prior to passing through the flowmeter transducer to the sewer (as per conditions of a Trade Waste Agreement (TWA) with Sydney Water Consent No. 24990). The sump in the wash bay and the Auto Batch unit are inspected and maintained according to the maintenance schedule in Maximo and the responsibility of the Engineering & Maintenance Department. The thickness of sediment and oil in the collection pit is periodically monitored and is pumped out at least annually.
		Sludge generated from the washing process in the wash bay is collected in the sump where it is pumped into 200L drums and disposed of by a licenced liquid waste contractor to a facility licenced to accept the waste. Waste transport and disposal records and maintained for a minimum of **five years**.
		The wash bay and workshop are roofed and bunded so that all uncontaminated stormwater from the roof areas is collected in 3x 20,000L tanks located on the northern side of the workshop.

3	**Maintenance wash bays and manually operated sump to remove sludge** - *continued*	
Generation of wastewater from the single wash bay discharged to sewer; Spills/leaks from the workshop and maintenance area, entering Botany Bay or Penrhyn Estuary (e.g. hydrocarbons, grit and rubber from vehicle tyres, waste oil sludge)	Breach of the Trade Waste Agreement; Pollution of stormwater or nearby waterbodies; e.g. Botany Bay or Penrhyn Estuary; Negative impacts on marine species within Botany Bay or Penrhyn Estuary; Impacts on Sydney Water Trade Waste system; Reputational harm.	The wash bays were designed and installed in accordance with Sydney Water's requirements, the most recently installed wash bay is non-operation and the operational wash bay is regularly cleaned and maintained. Design features include: • The floor of the wash bay is sealed and graded to the collection pit so that all wastewater and surface spillage is directed and drains to the centre pit or strip drain. • The wash bay is constructed with a minimum 20 mm bund around the perimeter; • The wash bay is protected from the entry of external surface waters, by either; a minimum 2% change in grade; or combination of a minimum 2% grade change and a grated drainage system; and • Roof with minimum height of 2.5m.
		The drains in the Maintenance workshop are blind and therefore isolated from stormwater drains. Wastewater collected within blind drains in the workshop is pumped out by a licensed waste contractor and transported for disposal at a licensed liquid waste treatment facility.

4	Hazardous and Liquid Waste Management	
Operational Environment		
A number of hazardous waste streams are generated at the Terminal, predominantly from the Maintenance workshop. These include (but are not limited to): waste oil, fuel, cleaning chemicals, paints, thinners, pest control chemicals, and their empty containers, batteries, fluorescent light tubes, used absorbent materials (leak/spill response).		
Aspect	**Impact**	**Control Measures**
Generation of hazardous waste; Generation of liquid waste; Inappropriate disposal of hazardous waste	Breach of waste legislation (tracking, disposal); Land contamination	In accordance with development conditions of consent and the EPL, only the hazardous and/or industrial and/or Group A wastes listed below may be generated and/or stored at the Terminal (Condition C3.39, CoA 453): • Waste oil/water, hydrocarbons/water mixtures or emulsions; and • Grease trap waste. Patrick will not **generate** more than 200 tonnes per year, or **store** more than 70 tonnes per year of the above-listed wastes.
		Waste oil is stored in 240L drums on bunded pallets in the roofed designated Waste Oil Store.
		Hazardous wastes are collected on an as-needs basis by an appropriately licensed waste transporter, classified in accordance with the NSW EPA Waste Classification Guidelines 2014, and directed to a waste management facility lawfully permitted to accept the waste.
		Records of hazardous waste removal are retained in accordance with the *Protection of the Environment Operations (Waste) Regulation 2014.* Records (i.e. transport and waste facility dockets, and Waste Transport Certificates) are maintained on site and available for inspection upon request.
		A Waste Register is maintained on site and includes information provided by the waste contractor such as waste classification, volume, and disposal facility.
		Sufficient supplies of appropriate absorbent materials are kept on site to recover any leaks/spills of liquid. Liquid spills are cleaned up using dry methods, by placing absorbent material on the leak/spill, and sweeping or shovelling the material into a secure bin. Absorbent materials used to clean up spills is disposed of to an appropriately licensed waste facility. A dry or wet road sweeper may also be used where necessary.

5	Handling of solids / liquid wastes collected from Stormwater Quality Improvement Devices (SQIDs)	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Storage and handling of solid and liquid wastes collected from SQIDs	Breach of waste legislation; Land contamination; Pollution of stormwater or nearby waterbodies	All solid and liquid wastes collected from stormwater treatment devices are disposed of in a manner that does not pollute waters (in accordance with Condition 7.20 of DA 453).
		Waste is not stored at the Terminal in quantities exceeding any licensing threshold under Schedule 1 of the *Protection of the Environment Operations Act 1997.*
6	**Special Waste and Biohazard Waste**	
Operational Environmental		
Special waste is sometime generated at the Terminal and includes clinical waste, waste tyres and asbestos. Biohazard waste contains or potentially contains pest species and presents a biosecurity risk.		
Aspect	**Impact**	**Control Measures**
Inappropriate disposal of special waste; Inappropriate management of quarantine waste	Breach of legislation; Land contamination; Pollution of stormwater or nearby waterbodies	Special wastes are classified in accordance with the NSW EPA Waste Classification Guidelines and disposed offsite to an appropriately licensed waste handling facility. Licensed asbestos removalists and/or Occupational Hygienists are engaged to provide adviceand manage any potential items containing asbestos at the Terminal.
		Special wastes are stored in a designated area prior to collection by an appropriately licensed waste transporter.
		A clinical waste bin and sharps container is available in the First Aid Room. Clinical waste is removed by contracted clinical waster service providers.
		Biosecurity/Quarantine waste is disposed of in accordance with the requirements of NSW Ports, EPA, and Biosecurity and Customs. Shipping lines engage licensed external contractors to collect and remove quarantine waste from ships when in port. Additionally, slops from ships (for example, oily water and sludge) are disposed by the same process where EPA licensed contractors to the shipping line visit the ship whilst in port and pump out and remove these wastes to a licensed disposal facility.

7	Waste from ships berthed alongside the Patrick Terminal (Not applicable to Patrick)

Operational Environmental

Although this is not applicable to Patrick, it is worth Patrick personnel being aware of who is responsible for what. Including Patrick reporting any waste suspect from a vessel.

While ships are permitted to dispose some types of waste at sea, there are strict requirements relating to the type of waste and the distance from land where the disposal may take place. The following pollution activity should be reported:

- discharge of oil from a vessel.
- any discharge from a ship involving washings of chemical or dry cargoes
- any plastic material
- garbage disposed of in the sea within 12nm of land (garbage includes food, paper, bottles etc.)

In NSW, the primary legislation affecting marine pollution is the *Marine Pollution Act 2012* which implements the International Convention for the Prevention of Pollution from Ships 1973 (known as MARPOL).

Aspect	Impact	Control Measures
Waste discharged from a vessel entering Botany Bay while berthed	Breach of the *Marine Pollution Act 2012*; Pollution of Botany Bay	Patrick is responsible for reporting any spills or incidents involving ships to the Port Authority of NSW and AMSA, including unauthorised waste discharged from ships berthed at the Terminal.
		In the event of any spill or emission from any vessel berthed at Patrick's Terminal, clean up responsibility is taken by the Port Authority of NSW, and the Australian Maritime Safety Authority (AMSA).

Monitoring and Reporting

Inspections

Inspection of waste storage facilities are undertaken as part of quarterly environmental inspections, including:

- office bin areas;
- skip bins;
- waste oil storage areas;
- stormwater management devices; and
- silt arresters and oil interceptors.

Waste tracking

Waste generated by Patrick is weighed by Patrick's waste disposal contractor when collected from the terminal, Patrick is advised of the:

- amount and classification of waste transported;
- name and license number of transporter;
- date transported;
- name and location of the receiving waste facility;
- waste Transfer Certificate (when appropriate); and
- processing (whether disposed or recycled).

On a regular basis, the waste disposal contractor will submit the waste data to Patrick who records it as part of the site Waste Register.

The HSE Manager analyses and graphs the results showing trends over time. This graph will be reviewed regularly by the HSEQ department and will be distributed in accordance with the below diagram:

Patrick will undertake an annual review of the ongoing monitoring and discuss justification in each Annual Environmental Management Report (AEMR).

Waste monitoring

Waste generation and recycling data for the Terminal is recorded and analysed by the Terminal's HSE Manager. Data gathered includes the volume of solid waste generated and recycled, and the amount of liquid waste generated and recycled. These results will form KPIs (see below).

Trade wastewater sampling and monitoring

The trade waste agreement identifies substances and discharge concentrations which must not be exceeded. Wastewater is monitored by an appointed contractor for Biochemical Oxygen Demand (BOD), Suspended Solids, Grease, and Volatile Hydrocarbons. Prior to discharge, the wastewater must also have the following properties:

- **Temperature**: Not to exceed 38 degrees Celsius;
- **Colour**: Determined on a system specific basis
- **pH**: Within the range 7.0 -10.0
- **Fibrous material**: None which could cause an obstruction to Sydney Water's sewerage system
- **Gross solids (other than faecal)**: A maximum linear dimension of less than 20mm, a maximum cross section dimension of 6mm and a quiescent settling velocity of less than 3m/h

Monitoring and Reporting - *continued*

- **Flammability**: Where flammable and/or explosive substances may be present, Patrick must demonstrate that there is no possibility of explosions or fires occurring in the sewerage system, to the satisfaction of Sydney Water. The flammability of the discharge must never exceed 5% of the Lower Explosive Limit (LEL) at 25 degrees Celsius.

The TWA also sets limits for the rates of discharge of wastewater to sewer, which are measured and recorded during monitoring events.

Documentation and record keeping

Patrick retains all records of waste measurement for traceability, including:

- Waste receipts; and
- Waste transfer certificates.

The details of these documents will be entered into the Terminal's Waste Register and summarised and included in the Annual Environmental Management Report (AEMR) issued by the HSE Manager and uploaded onto the Patrick website.

Records relating to waste disposal are maintained for a period of **five years**.

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.4.4: Waste and Wastewater Management – KPIs

	Key Performance Area	KPI
1	Amount of solid waste generated, and the amount of waste recycled expressed as cubic metres of solid waste generated per TEU and cubic metres of solid waste recycled per TEU.	Trending downwards
2	Amount of liquid waste generated, and the amount of liquid waste recycled expressed as litres of liquid waste generated per TEU and litres of liquid waste recycled per TEU.	Trending downwards
3	Compliance with the conditions of the Discharge Industrial Trade Wastewater consent (No. 24490).	Zero (0) non-compliances
4	Compliance with the conditions of the Trade Wastewater Discharge Schedule (Permit No. 40110).	Zero (0) non-compliances
5	Compliance with Condition L2.3 of EPL 6962 re in-transit wastes (200 tonnes pa generation and 70 tonnes storage).	Zero (0) non-compliances

Review and Improvement
The review and amendment of this management plan will be in accordance with **Section 5 - Review and Improvement** of this OEMP. Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting, Section 4.4** of this OEMP. Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of the OEMP.

6.5 Dangerous Goods and Hazardous Chemicals/Substances Management Plan

Objective
To provide direction for the storage and handling of dangerous goods (DGs) and hazardous chemicals/substances in accordance with environmental legislative and other requirements, thereby reducing the likelihood of environmental harm.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • Australian Dangerous Goods Code 7th Edition, 2007 (ADG7) • *Environmentally Hazardous Chemicals Regulation 2017 (NSW)* • *Environmental Planning and Assessment Act 1979 (NSW)* • International Maritime Dangerous Goods Code (IMDG Code) 2016 • National Code of Practice for the Storage and Handling of Workplace Dangerous Goods [NOHSC: 2017 (2001)] • Port Authority of New South Wales – Dangerous Goods Management Guidelines for Patrick Terminal Port Botany, 27 March 2015 • *Work Health and Safety Act 2011 (NSW)* • *Work Health and Safety Regulation 2017 (NSW)*

Development Consent DA 494	C2.16, C2.17 & C2.18
Development Consent DA 453	7.4, 7.6, 7.7, 7.8, 7.9 & 7.10
EPA Licence 6962	A1 Scheduled Activity (Chemical storage); & O1.1
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	18.5.2, 28.10.1 & 32.2.4

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2** - **Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.5.1: **Dangerous Goods and Hazardous Chemicals/Substances – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors	Training Coordinator and/or HSE Manager; Facilities Manager
2	Temporary storage of dangerous goods and/or hazardous substances in shipping containers (in transit) at the Terminal	Landside Manager
3	Storage and handling of hazardous chemicals in the Maintenance workshop	Facilities Manager; Maintenance personnel; Relevant contractors/service providers

	Task	Responsibility
4	Review of DG information (including the MO41 declaration) submitted by Carriers and Shipping Lines.	National Operating Centre (NOC) Planners
5	Implementation of spill response procedures, including reporting.	Plant Operators; Technical Specialists; Relevant contractors/service providers
6	Prior to bringing dangerous goods and/or hazardous chemicals on site obtain approval.	Relevant contractors/service providers; Engineering & Maintenance Manager
7	Obtain the Safety Data Sheet (SDS) for hazardous chemicals purchased.	Maintenance Purchasing Officer; Facilities Manager; Relevant contractors/service providers
8	Investigation of leaks (e.g. oil), from mobile plant and equipment at the Terminal.	Engineering & Maintenance Manager; HSE Manager
9	Investigation of leaks from DG and/or hazardous substances containers stored (in-transit) at the Terminal	Operations Manager; HSE Manager
10	Monitoring of DG and Hazardous Substances throughput in compliance with the consents, this OEMP and analysis of results.	Landside or Operations Managers; HSE Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Oxygen and acetylene cylinders - properly stored in an upright position and adequately restrained away from heat sources	

#	Description	Photo
2	Spill response kits	
3	Spill trailer - for the placement of a leaking shipping container	
4	Flammable chemical storage cabinet	

Operational Environmental Aspects and Impacts, and Control Measures	
1	Maintenance Department storage of hazardous chemicals (excluding fuel)
2	Temporary storage of dangerous goods and hazardous substances in transit (shipping containers)

Table: 6.5.2: **DGs and Hazardous Chemicals/Substances - Operation Environmental Aspects, Impacts and Control Measures**

1	**Maintenance Department storage of hazardous chemicals (excluding fuel)**

Operational Environmental

A number of hazardous chemicals used at the Terminal are stored and handled in the Maintenance Department. Products include (but are not limited to): oils, solvents, and gases.

Aspect	Impact	Control Measures
Maintenance Department storage and handling of hazardous chemicals (excluding fuel) resulting in a leak or spill	Pollution of water and/or sediment within Penrhyn Estuary or Botany Bay	Hazardous Chemicals stored and handled by Maintenance at the Terminal must be accompanied by a Safety Data Sheet (SDS) and details included in the site Hazardous Chemical Register. SDSs older than 5 years old will be replaced.
		Hazardous chemicals must be stored in compliance with the manufacturer's recommendations and in accordance with Australian Standards. When not in use, all workplace hazardous chemicals will be stored in designated storage cabinets.
		The quantities of hazardous chemicals stored at Maintenance shall be minimised. Quantities, and storage and handling arrangements are monitored daily.
		Oxygen and acetylene cylinders are properly stored in an upright position and adequately restrained away from heat sources.
		Stormwater control devices are located across the Terminal to reduce the risk of contaminated runoff entering Botany Bay or Penrhyn Estuary. Refer to the **Stormwater Management Plan, Section 6.2** of this OEMP for detail of environmental risks and controls associated with fuel storage and refuelling.
Maintenance Department storage and handling of hazardous chemicals (excluding fuel) resulting in a leak or spill	Pollution of water and/or sediment within Penrhyn Estuary or Botany Bay	Spill response kits are situated in key locations around the Terminal and Patrick's Maintenance employees have been trained in the use of spill response kits and incident response. Leaks/spills are quickly identified, contained and reported. A spill trailer for the placement of a leaking shipping container is also available at the Terminal.

1	Maintenance Department storage of hazardous chemicals (excluding fuel) *continued*	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Maintenance Department storage of transportable containers containing dangerous goods or flammable liquids next to Diesel Decanting Bay	Fire Hazard to Diesel Decanting Bay.	No transportable containers holding dangerous goods, particularly flammable liquids are to be stored or located next to the Diesel Decanting Bay.

2	Temporary storage of dangerous goods (DGs) and Hazardous Substances in-transit (shipping containers)	
Operational Environmental		
The Terminal has the capacity to store DGs in shipping containers in potentially large volumes prior to collection for transport by road or rail. DGs stored at the site can be in solid, liquid or gaseous form. The handling of DG cargo poses a specific threat to the surrounding environment because of the consequences and possibility of pollution incidents. A detailed assessment of risks associated with the storage and handling of DGs at the Terminal has been conducted and documented in a Preliminary Hazard Analysis (Sydney Ports Corporation, Port Botany Expansion Preliminary Hazard Analysis, Qest Consulting, 9 June 2004). The DG classes posing a significant risk are Classes 1.1, 1.2, 2.3 and 8.		
Aspect	**Impact**	**Control Measures**
Leaks of DGs from shipping containers stored at the Terminal; Inadequate separation or segregation of incompatible DGs resulting in a reaction	Pollution of water and/or sediment within Botany Bay or Penrhyn Estuary; Air pollution and associated ecological impacts; Exceedance of annual threshold limits in the development consent	Patrick will comply with the Dangerous Goods Management Guidelines for Patrick Terminal Port Botany, prepared by the Port Authority of NSW, dated 27 March 2015. These guidelines categorise DGs into Red Line and Green Line cargoes and set time limits for the cargo to be stored at the Terminal. Compliance with these time limits is continually monitored by Terminal Operating System (TOS).
		The storage location of DGs at the Terminal is considered based on segregation rules for different classes of DGs. Data entered into the TOS ensures incompatible DGs are not stored within a certain distance of each other, as specified in the DG Management Guidelines.
		Patrick implement measures to reduce the annual DG throughput to quantities listed in the development consent. This in turn reduces potential offsite risks associated with the storage of large volumes of DGs in transit at the Terminal.

3	Temporary storage of dangerous goods (DGs) and Hazardous Substances in-transit (shipping containers)	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Leaks of DGs from shipping containers stored at the Terminal; Inadequate separation or segregation of incompatible DGs resulting in a reaction	Pollution of water and/or sediment within Botany Bay or Penrhyn Estuary; Air pollution and associated ecological impacts; Exceedance of annual threshold limits in the development consent	A DG Manifest is prepared daily by the Shipping Lines to record the volume and type of in-transit DGs stored at the Terminal.
		Stack reports are prepared to confirm DG storage locations. Patrick can use these reports to regulate the arrival of DG containers so that the annual threshold limits in the development consent are not exceeded.
		Dangerous goods (i.e. shipping containers) are routinely spot checked by the Dangerous Goods Inspector/Officer from the Port Authority NSW to ensure red line cargo does not stay on the Terminal past its allowable dwell time limit.
		Designated storage areas are provided for DGs in transit. These areas are bunded to contain spills/leaks and prevent potential environmental impacts.
		Stormwater control devices are located across the Terminal to reduce the risk of contaminated runoff entering Botany Bay or Penrhyn Estuary. See the Stormwater Management Plan for more detail on environmental risks and controls associated with the storage of containerised DGs at the Terminal.
		Spill kits are situated in key locations around the Terminal and Patrick employees have been trained in the use of spill kits and incident response. Leaks/spills are quickly identified, contained and reported. A spill trailer is also available at the Terminal.
		Patrick employees involved with handling DGs are required to complete a two-day Maritime General Awareness & Maritime Function Specific training course. Refresher training is required to be completed annually. All new Patrick employees involved in the handling of DGs are required to complete the initial two-day training course.

Monitoring and Reporting

With reference to:

- Dangerous Goods Management Guidelines for Patrick Terminal Port Botany, 27 March 2015, Port Authority of NSW; and
- Patrick Port Botany Terminal Standard Operating Procedure – **Storage and Handling of Hazardous and Dangerous Goods, PBT_OPS_SOP_04_03**

There are limits on the quantities of certain dangerous goods permitted on a vessel at the various berths in Botany Bay. In addition, dangerous cargo shall have a set time permitted to remain on a terminal (classified as either Red or Green Line). Patrick's TOS has the ability to identify and monitor the types and quantities of DGs and hazardous substances transiting through the Terminal. This data is used to ensure DGs stored in transit on site remain below threshold limits.

Lodging DGs with Port Authority of NSW via ShIPS electronic booking and approval system:

The Port Authority of NSW must be advised of all DGs to be imported or exported by vessel, including transhipments and/or goods transiting the ports. The method of notification of the DGs is through electronic lodgement in Sydney's Integrated Port System (ShIPS). ShIPS is an electronic booking and approval system which is accessed through the internet.

Classifying the cargo as Red or Green line is an automated process within ShiPS once a lodgement has been made. Lodgement of DGs must be made at least 24 hours prior to the vessel entering port (at least 48 hours for Class 1 DGs).

A red coloured "L" is displayed in the ShIPS screen if limitations for a vessel or berth are exceeded. The vessel operator is responsible for the management and removal of the limitation exceedance at least 24 hours prior to the vessel entering port waters. Depending on the circumstances, the vessel may have to be redirected, or entry of the vessel into port may be refused.

When an application for exemption has been entered on the ShIPS system, a red coloured "X" is displayed when the exemption is entered. The Port Authority of NSW may approve the application for exemption with certain conditions imposed or may reject it. When the exemption is processed the "X" it turns a light shade of grey.

Permitted Time Periods at the Terminal:

The requirements below for Red Line and Green Line cargoes apply to imports, exports, transhipments, including transit cargoes which are being re-stowed.

Red Line Cargo:

2-hour, time maximum – All Class 1 and Class 7, except Class 1.4 and Class 7 Low Specific Activity (LSA) cargo, shall:

a) be removed from the Terminal within 2 hours of being unloaded from a vessel, and
b) be delivered to the Terminal within the 2-hour period prior to the cargo being loaded onto a vessel.
c) transhipment cargo must comply with (a) and be removed from the Terminal within 2 hours of being unloaded from a vessel. However, they may remain on the terminal in excess of 2 hours only when they have a valid exemption in place issued by Port Authority of NSW.

Monitoring and Reporting *continued*

12-hour, time maximum - Containers with Class 1.4 and Class 7 LSA DGs; all DGs in break bulk; and cargo (refer to Table 1 [Note 1]).

[Note 1] - Port Authority of New South Wales – Dangerous Goods Management Guidelines for Patrick Terminal Port Botany, 27 March 2015

Green Line Cargo:

5-days, time maximum - Green Line cargoes are permitted to remain on the Terminal for a time period of up to 5 days only including weekends and/or public holidays. Green Line cargoes are:

a) All containers with DGs Class 2, 3, 4, 5, 6, 8 or 9, other than those in Table 1. [Note 1]
b) Cargoes listed in Table 1 [Note 1] not exceeding 500kg mass.
   i) be removed from the Terminal within 5 days of being unloaded from a vessel, and
   ii) be delivered to the Terminal within the 5 days prior to their being loaded onto a vessel.
   iii) transhipment cargo must comply with (i) and be removed from the Terminal within 5 days of being unloaded from a vessel. However, they may remain on the terminal in excess of 5 days only when they have a valid exemption in place issued by Port Authority of New South Wales.

Class 5.1 Packaging Group 1 (PG 1) Dangerous Cargoes [Note 1]

Quantities of Class 5.1 PG 1 dangerous cargoes exceeding 400 tonnes shall only be handled on a berth with the consent of the Regulatory Authority.

Prohibited Dangerous Goods [Note 1]

The following DGs are prohibited from entering port waters:

- **UN 3342, XANTHATES, Class 4.2 – Packaging Group II or III**

These DGs are prohibited for the following cargo movements: “Imports, Transit (stay on board) and Export” cargo movements.

Stacking and Segregation

TOS contains segregation rules that conform to the IMDG Code. Designated hazardous / DG Yard position slots have been established at the end of container rows within the Terminal’s Auto Strad Yard. The following general considerations will apply:

- DGs / hazardous containers (required to be labelled under the IMDG Code) are to be stacked in the Yard and where possible, with the doors accessible at the end of designated rows of the DGs stowage slots;
- Stacking is to be at ground level where possible, however multi-tier stacking is permitted if necessary;
- Designated DGs / hazardous stowage slots may be used for general containerised cargo when not required for DGs / hazardous containers. However, DGs / hazardous containers are not to be stacked above general cargo containers in a multi-tier stack situation; and
- DGs / hazardous containers are to be separated in accordance with the table provided in Appendix 2 of the DG Guidelines, titled: Separation Distances Between Closed Containers Carrying Dangerous Goods.

Monitoring and Reporting *continued*

Routine Auditing by Port Authority of NSW

DG officers from the Port Authority of NSW periodically attend the Terminal and conduct an inspection of the red line and green line cargo on the Terminal.

Dangerous goods data

DG data from reports generated from TOS is included in the Annual Environmental Management Report (AEMR) which is submitted by Patrick to NSW Ports and DPIE.

Maintenance storage and handling of hazardous chemicals

Chemical storage audits are also conducted by the Maintenance Department (annually). Details of these events will be entered into the site's Environmental Register, the results analysed and where necessary subsequent corrective actions proposed by the HSE Manager.

Dangerous Goods Training

Patrick personnel involved in the handling of DGs (i.e. Shift and Yard Managers, Stevedoring Managers, Rail Coordinators and Tower and Senior Clerks) will complete the initial two-day Maritime General Awareness & Maritime Function Specific training course (AMSA accepted DG Training Course based on based on the current IMDG Code Amendment for the next two years).

All new Patrick employees involved in the handling of DGs are required to complete the initial 2-day training course. Refresher training in the IMDG Code Amendment 39-18 is effective from January 1, 2019 and mandatory from January 1, 2020). The 1-day refresher training is planned in the next reporting period for all Patrick employees involved with handling dangerous goods and who have completed the initial 2-day training course.

Based on the training completed the Terminal issues an annual Statement of Compliance to the Port Authority of NSW (Dangerous Goods Unit). Training records are to be kept and made available for the Port Authority of NSW to inspect upon request.

Leak/spill response

In the event of a leak or spill of DGs or Hazardous Chemicals/Substances, and depending on the quantity involved, required response is addressed via the **Emergency Response Plan (PBT_HSE_PLN_09_01)** spill response procedure.

Dangerous Goods Movements – Classes 1.1, 1.2, 2.3 and 8

On annual basis the dangerous goods (Classes 1.1, 1.2, 2.3 and 8) throughput data for the period 1 September to 31 August, e.g. class, tonnage, number of TEUs and packaging sizes, is provided to NSW Ports for their preparation of the **Annual Dangerous Goods Report** (DA-494, C2.17).

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.5.3: **DGs and Hazardous Chemicals/Substances Management – KPIs**

	Key Performance Area	KPI
1	Number of pollution incidents involving liquid spills or gas leaks during the handling of dangerous goods or hazardous chemicals / substances.	Zero
2	Number of exceedances of the dangerous goods classes (1.1, 1.2, 2.3 and 8) throughput limits specified in Development Consent DA 494, condition C 2.17 (i.e. Berth 6).	Zero exceedances
3	The amount specified in Development Consent Condition C 2.18 (storage or handling of Dangerous Goods Class 2.3, toxic compressed or liquefied gases above the quantities stored or handled in 1995/96 except in accordance with recommendations 1.1 and 1.2 in the Port Botany Land Use Safety Study (1996)) shall not be exceeded.	Zero exceedances

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting**, **Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.

6.6 Operational Noise Management Plan

Objective
To identify and document potential noise related risks and develop appropriate mitigation measures to facilitate compliance with the development consents with regard to noise (and vibration) management; and to provide a basis for consultation with relevant stakeholders in regard to minimising or eliminating noise impacts.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Environmental Planning and Assessment Act 1979 (NSW)* • *Industrial Noise Policy 2000 (NSW)* • *International Regulation for the Prevention of Collisions at Sea* • *Noise Policy for Industry 2017 (NSW)* • *Protection of the Environment Operations Act 1997 (POEO Act) (NSW)* • *Protection of the Environment Operations (General) Regulation 2009 (NSW)* • *Protection of the Environment Operations (Noise Control) Regulation 2017 (NSW)*

Development Consent DA 494	C2.5, C2.6, C2.7, C2.8, C2.9, C2.10 & C2.11
Development Consent DA 453	Noise - 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 5.8 & 6.4 (e); Vibration - 7.1, 7.2 & 7.3
EPA Licence 6962	L3.1, L3.2, L3.3, L3.4, L3.5, L3.6 & L3.7; Special Condition E1.1 & E1.2
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	22.4.2 & 22.5.2

Key Tasks and Responsibilities
A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.6.1: **Operational Noise (and vibration) Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors.	Training Coordinator and/or HSE Manager; Facilities Manager
2	Maintenance of plant / equipment to ensure noise control devices are in optimal working order.	Maintenance Department; Relevant contractors/service providers
3	Proper landing of containers.	Plant (quay crane) Operators; Shift Managers
4	Arrange 6-monthly noise monitoring with Acoustics Consultant.	HSE Manager

	Task	Responsibility
5	Conduct 6-monthly noise monitoring.	3rd party Acoustics Consultant/Engineer
6	Review and report 6-monthly noise monitoring to stakeholders and carry out improvement initiatives where practicable.	HSE Manager
7	Ensure all machinery is installed and/or housed to minimise the emission of noise and transmission of vibration outside of the premises.	Engineering & Maintenance Manager; Relevant contractors/service providers; HSE Manager
8	Ensure vibration levels induced by the use of the premises or any equipment/service associated with the Terminal does not exceed 1mm/sec peak particle velocity when measured at the footing of the any adjoining occupied building.	Engineering & Maintenance Manager; Relevant contractors/service providers; HSE Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Noise attenuation wall positioned on the Northern side of the Patrick terminal, between Hutchison's rail siding and the Penrhyn Estuary	

Operational Environmental Aspects, Impacts and Controls	
1	Use of plant and equipment within the Terminal
2	Containers landing on vessels, hardstand areas, train wagons and truck trailers
3	Freight trains and rail activities
4	Noise from ships

Operational Environment

Sensitive receivers and land uses, which have the potential to be impacted by noise associated with the Terminal operations include:

ID	Sensitive Receivers	Approximate distance from the Terminal (m)	Direction
a.	Botany residential area	750	North
b.	Matraville residential area	700	East
c.	Port Phillip residential area	1900	Southeast
d.	Banksmeadow Public School	1300	North
e.	Matraville Public School	1500	Northeast
f.	Sir Joseph Banks Park	1000	North
g.	Botany Golf Course	350	North
h.	Purcell Park	700	East
i.	Women's Athletic Field	1750	Southeast
j.	Yarra Bay Bicentennial Park	1300	Southeast
k.	Yarra Recreation Reserve	1600	Southeast
l.	Botany Cemetery	1000	Southeast

Table: 6.6.2: **Operational Noise - Operational Environmental Aspects, Impacts and Control Measures**

1	Use of plant and equipment within the Terminal

Operational Environmental

The Terminal features a combination of electric and diesel plant, machinery and equipment used in the general operation of the Terminal and for maintenance activities. It can be expected that noise from these assets will have some impact on nearby residents unless adequately managed. The main areas of concern are engine noise and reversing alarms (e.g. quay cranes, AutoStrads, ARMGs, reach stackers, Elevated Work Platforms, forklifts, light vehicles, ITV trucks and customer trucks).

Under the requirements for safe work, all mobile plant within the Terminal are fitted with audible motion and low tonal ('quacker') reversing alarms. The noise from high pitched 'beeper' type reversing alarms is known to carry for long distances and may present a nuisance to nearby residents.

AutoStrads are fitted with noise reduction kits with sound attenuation material on the side and top plates of the power unit cover and acoustic louvers on the outlet ventilation system. The Section 75W Modification - Port Botany Container Terminal Project (DA-453-12-2002-i MOD 8) Environmental Assessment assessed AutoStrads to have lower operational noise than the previous manual straddle carriers (117 dB(A) vs 127 (dB(A)).

1	Use of plant and equipment within the Terminal *continued*	
Aspect	**Impact**	**Control Measures**
Noise (and vibration) emitted from plant and equipment used at the Terminal (e.g. reversing alarms)	Nuisance to nearby residents resulting in complaints; Breach of EPL; Reputational harm	Where it is safe and practicable to do so Patrick has initiated a noise reduction project to reduce noise emissions: • Reversing beepers on reach stackers and forklifts have been replaced with low tonal reversing alarms ('quackers'). • Connecting and moving alarms on the AutoStrad fleet are being replaced with LED blue flashing lights.
		Patrick will work with transport carriers to encourage the use of 'quacker' alarms, however the responsibility for installing these alarms rests with the transport carriers.
		Patrick have modified the lid alarms on cranes to standardise the sound emitted from the alarms and to direct the lids down. Noise monitoring has been undertaken following the modifications and results confirm that the crane lid alarms comply with the Terminal noise limits. Warning lights (visual alarms) are also used at night.
		Prior to operating an asset, the operator checks that fitted noise control devices and reversing alarms are adequate and working correctly as part of a pre-start checking procedure. These pre-start checks are recorded on a pre-start checklist and any rectifications are managed and recorded by the maintenance department in a timely manner.
		Assets are operated by trained operators in a way which minimises noise impacts. Furthermore, idle time is minimised through throttling down and switching off assets when possible.
		Operational inspections and asset break-down, regular scheduled maintenance by the Maintenance Department includes inspection of noise control devices such as mufflers and insulating panels and the repair or replacement of defective units.
		As part of the purchasing process of new plant and equipment the Engineering & Maintenance Department consider noise (and vibration) levels and controls.
		Machinery is installed and/or housed to minimise the emission of noise and transmission of vibration outside of the Terminal does not exceed 1mm/sec peak particle velocity when measured at the footing of the any adjoining occupied building.
		Noise mitigation is covered in the Site Induction which includes the requirements to minimise noise from operations and cargo handling; noise also forms part of routine tool box talks.

2	Containers landing on vessels, hardstand areas, train wagons and truck trailers	
Operational Environmental		
The noise from containers landings on hard surfaces occasionally impacts nearby receivers in certain wind conditions. The majority of the controls to minimise noise from containers landing on hard surfaces are built into the machines that lift them. Soft landings are achieved by programming the machine control systems to slowly lower containers when approaching ground level.		
Aspect	**Impact**	**Control Measures**
Noise emitted containers landing on vessels, hardstand areas, train wagons and truck trailers	Nuisance to nearby residents resulting in complaints; Breach of EPL; Reputational harm	Quay cranes have inbuilt mechanisms to land containers and vessel hatch lids slowly to avoid banging that are complimented by plant operator awareness and training.
		Quay crane operators are trained to line up containers and vessel hatch lids with insertion guides on the ship's hold carefully to avoid banging.
		AutoStrads have inbuilt mechanisms to land containers slowly to avoid banging that are complimented by Tele-Op Operator awareness and training.
		AutoStrads are guided by laser systems and are programmed to land containers slowly to avoid banging.
		Reach stacker operators are trained to land containers slowly so as to line up containers with the twist locks on rail cars thus avoiding banging.

3	Freight trains and rail activities	
Operational Environmental		
Patrick moves a percentage of its throughput using the NSW rail network. Patrick manages a parallel rail siding (each track is 0.745 m) providing 1.490 km of track in total. During train entry and exit to the Terminal, a sliding access gate must be opened. Under the requirement for safe work operating procedures, opening the siding gate activates flashing lights and audible alarms which remain activated until the gate is closed. Idling freight trains during loading and unloading can be expected to contribute to noise emissions from the Terminal. Additionally, freight trains longer than 600 metres need to use the two sidings simultaneously. This is achieved by marshalling the train into one siding until it reaches the end, then uncoupling (splitting) and moving the remainder of the wagons into the adjacent siding. This marshalling process and the locomotives themselves create some noise that may impact sensitive receivers.		
Aspect	**Impact**	**Control Measures**
Noise emitted from freight trains and rail activities (e.g. rail siding gate alarm, idling freight trains and trucks), splitting rolling stock between 2 rail lines	Nuisance to nearby residents resulting in complaints; Breach of EPL; Reputational harm	A noise attenuation wall is positioned on the Northern side of the Patrick Terminal, between Hutchison's rail siding and the Penrhyn Estuary. The wall is 3 metres high when parallel to the railway siding, and 4 metres high along the northern and eastern sides of the Hutchison Terminal. The noise attenuation wall is expected to minimise the noise emanating from Port Botany.
		When open, the safety alarm for the rail terminal gate is activated for a continuous period. Rail operations are planned and controlled so that the siding gate is not opened for longer than necessary.
		Locomotives are 'powered down' during idle periods to attenuate noise impacts.
		Patrick staff working within the rail siding undergo training on the correct marshalling of trains within these sidings to foster awareness of noise issues.
		The unnecessary use of whistles or horns by trains on the rail siding is not permitted, to prevent disturbances to shorebirds in Penrhyn Estuary and other sensitive receivers. Under the requirements for safe work, the use of train horns will prevail when necessary.

4	Noise from ships	
Operational Environmental		
Although noise emanating from ships is outside the control of Patrick, it is noted that noise may be generated due to: • Operation of engines for the purposes of electricity; and • Use of ship's horn in order to communicate movement intentions. This is a requirement under the International Regulation for the Prevention of Collisions at Sea and NSW Maritime Law		
Aspect	**Impact**	**Control Measures**
Noise emitted from berthed ships (e.g. engines)	Nuisance to nearby residents resulting in complaints; Breach of EPL; Reputational harm	Patrick liaises with the shipping lines so that noise emanating from ships deemed to have adverse impacts on nearby residents is mitigated as much as practicable. If a ship is identified as particularly noisy, the Port Authority of NSW / NSW Ports may be contacted, and port officers can be dispatched to the ship to attempt to identify and remedy the noise issues.
		Controls to reduce noise from ships whilst berthed include shutting off the main engine(s) and running smaller engines to drive generators for the operation of the ship's systems and the preservation of refrigerated cargo. This practice generates significantly less noise than using the main engines.
Monitoring and Reporting		
The HSE Manager monitors the implementation and effectiveness of the controls within this operational noise management plan (ONMP) during regular terminal inspections. Noise monitoring is conducted 6-monthly by a 3rd party acoustics engineer as per the conditions of EPL 6962 and development consents. Noise monitoring reports are publicly available on Patrick's website: https://patrick.com.au/environmental-monitoring/ At the 3-monthly Port Botany Consultative Community Committee (PBCCC), there is a fixed agenda item where NSW Ports raises any noise related inquiries, comments or complaints received from the public and/or EPA. Refer to **Section 4.7 - Community Consultation Committee,** of this OEMP.		

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.6.3: **Operational Noise Management – KPIs**

	Key Performance Area	KPI
1	Noise disturbances expressed as the number of public inquiries, comments or complaints either from the community and/or EPA	Zero (0) complaints
2	Noise from the premises must not exceed EPL noise limits	Zero (0)
3	Noise monitoring must be conducted every 6 months and a report provided to the EPA, NSW Ports and the DPIE	Six-monthly
4	A copy of the noise monitoring report is uploaded onto the Patrick website	Within 2 weeks of receiving the final report

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting, Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.

6.7 Operational Traffic Management Plan

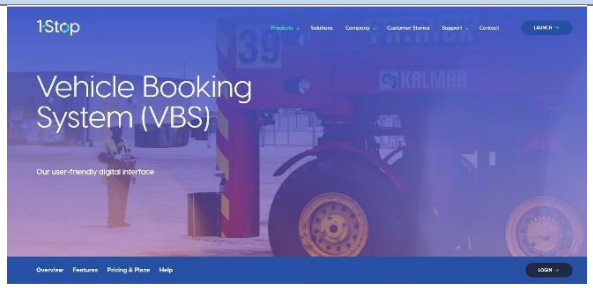
Objective
To guide the direction to Patrick's Operations (including Maintenance) to mitigate the effects of operational traffic to the surrounding area and local community so far as reasonably practicable. Note: This OTMP does not include any construction activities or construction traffic management, or the management of over-weight trucks etc.

Statutory Requirements and Legislative Framework	
The legislation and other compliance requirements that apply to the OEMP implementation are listed below: • *Environmental Planning and Assessment Act 1979 (NSW)* • *Ports and Maritime Administration Act 1995 (NSW)* • *Ports and Maritime Administration Regulation 2012 (NSW)* • *Protection of the Environment Operations Act 1997 (NSW)*	
Development Consent DA 494	C2.12
Development Consent DA 453	3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15, 3.16, 3.17, 3.18, 3.19, 3.20, 3.21, 3.22, 3.23, 3.24, 3.25 & 6.4 (c)
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	21.10

Key Tasks and Responsibilities
A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities of** this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.7.1: **Operational Traffic Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors.	Training Coordinator, or HSE Manager; Facilities Manager; Landside Manager
2	Adhere to internal (Terminal) and external (road network) traffic routes and controls.	Heavy vehicle drivers; and light vehicle drivers
3	Communicate with heavy vehicle drivers and transport carriers.	Landside Manager
4	Communicate with light vehicle drivers.	Operations Manager; Engineering & Maintenance Manager
5	Review traffic monitoring and analysis of data, identify any trends.	Landside Manager
6	Review any findings with stakeholders and carry out any improvement initiatives where possible.	Landside Manager

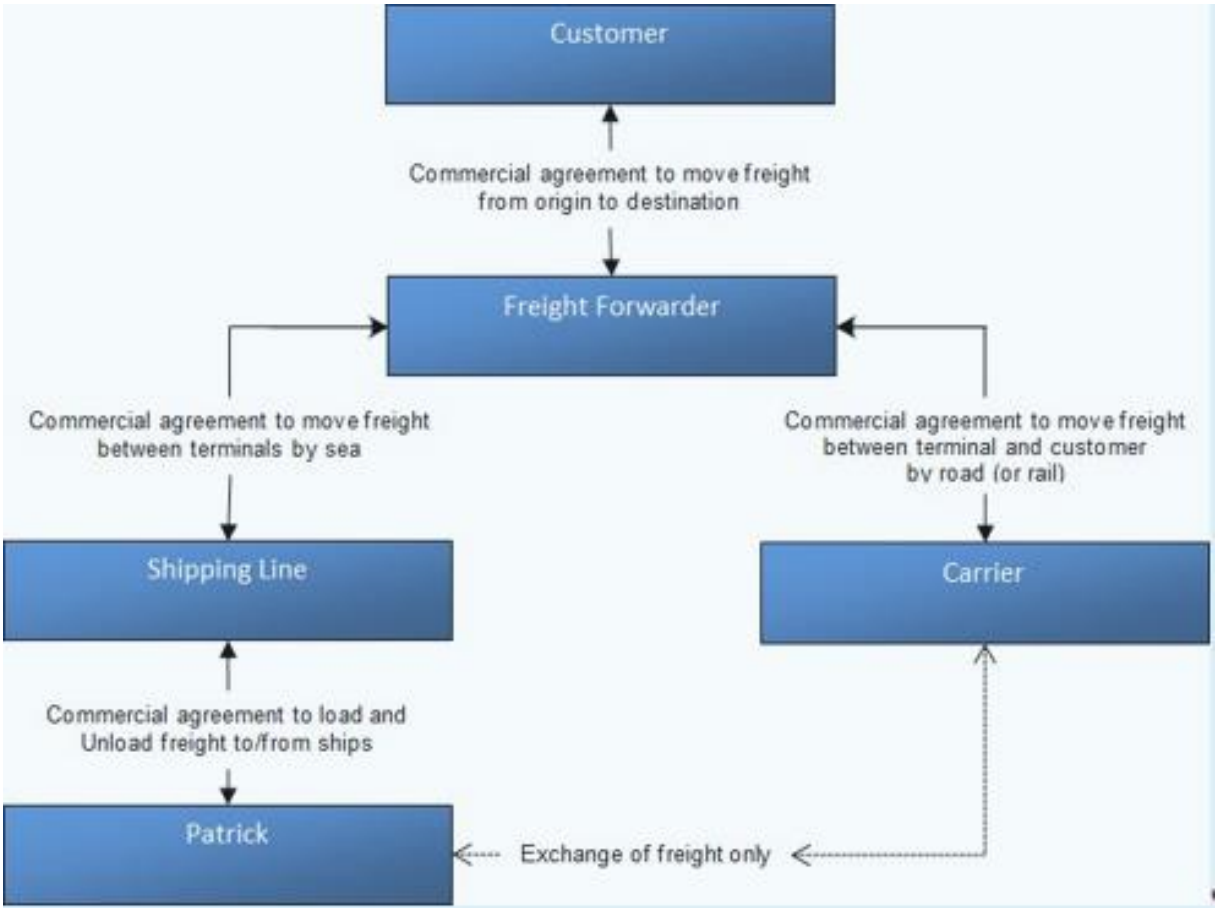
Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	1-Stop time slot booking system - allows transport carriers to book a time slot on-line, trucks must turn up within their allocated time slot or early or late fees become applicable under the Port Botany Landside Improvement Strategy	
2.	Driving on Penrhyn Road to or from the Terminal	
3.	Controlled swipe access for truck drivers to gain access to the Truck Grids with valid MSIC	

Operational Impacts and Control Measures

The importing and exporting processes involve a variety of participants connected through different mechanisms. The following explanation of these mechanisms is to assist with understanding Patrick's involvement within the context of the supply chain.

The process of importing and exporting involves a variety of participants within the context of the Supply Chain i.e., from the Customer, the freight forwarder, the shipping line, carrier, and Patrick. Figure 6.7.1 provides an overview of the relationships between the participants.

Figure 6.7.1: Supply Chain Relationship



Process Overview of Import and Export Shipping Container Movements

The Freight Forwarder is at the centre of the supply chain process connecting the sea and land components of the transport system. There is no relationship between the Terminal (Patrick) and the Freight Forwarder because the Shipping Line controls this part of the process.

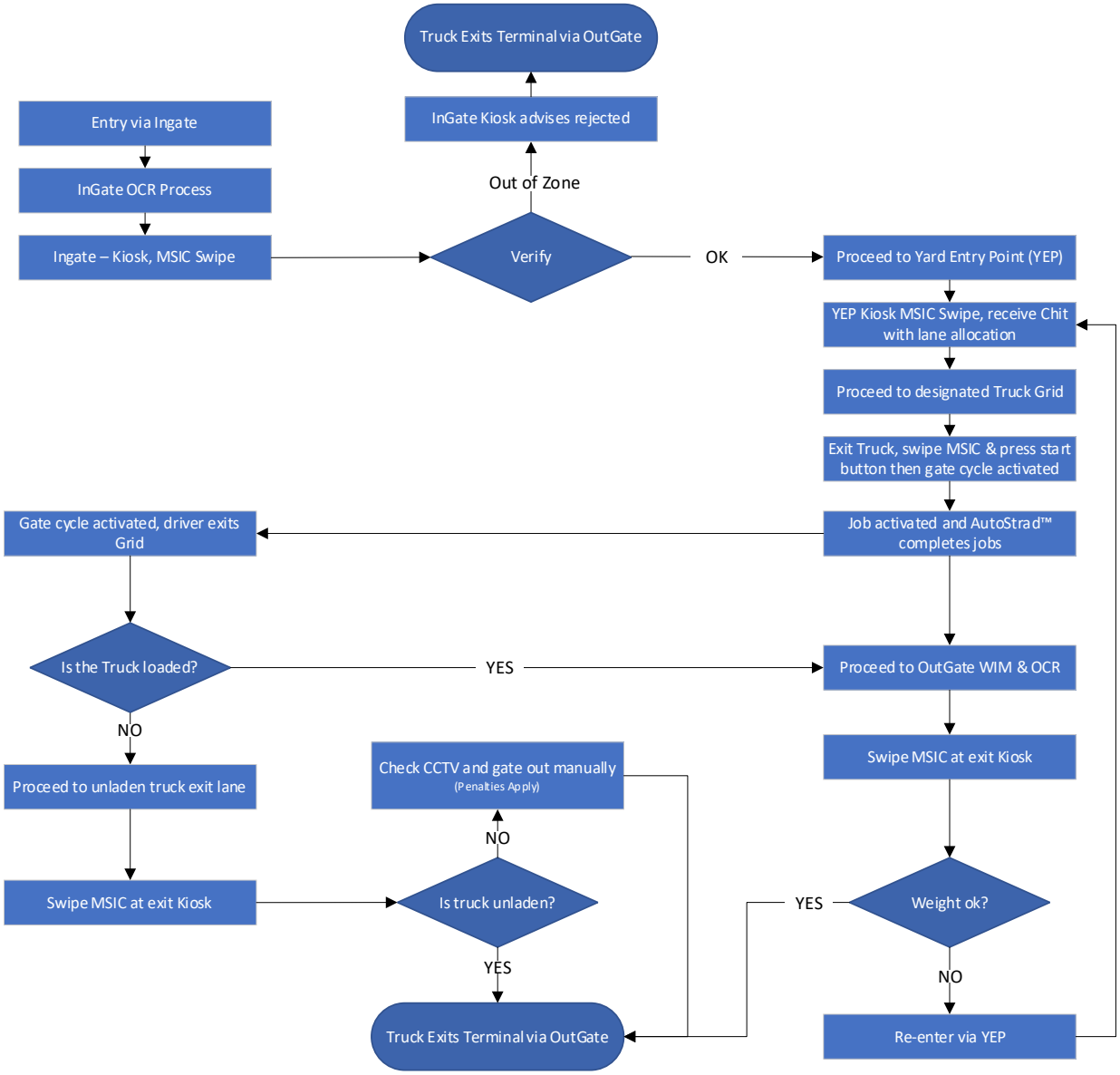
Patrick engages a Rail access agreement between each rolling stock operator which stipulates the operational requirements for each operator and the minimum requirements for the condition of their rolling stock. Qube in its capacity as the Rail Infrastructure Manager (RIM) engages in Safety Interface Agreements (SIA) with each rail provider (i.e. responsible for providing shunters and train drivers) which details the safety procedures and requirements for safe movement of trains within the Patrick Siding. Terminal access agreements are in place for

all road and rail carrier stipulating compliance with COR requirements, when containers are booked, they must agree that this complies with COR requirements.

With no formal agreement between the Terminal and the Carrier, the Terminal has no direct control over the actions of the Carrier. Where practicable, Patrick will influence and encourage Carriers to operate responsibly and will promote considerate truck / train driver habits to minimise potential noise and traffic issues.

Process Overview of Truck Grid Container Exchange & Rejection

Figure 6.7.2: Process Overview of Truck Grid Container Exchange & Rejection



Operation Environmental Aspects, Impacts and Controls	
1	Noise impacts to the surrounding community from truck movements
2	Terminal congestion related to throughput and scheduling
3	Traffic impacts to the road network from queuing of trucks at the terminal entry
4	Noise and traffic impacts from trucks using non-preferred routes

Operational Traffic Environmental Impacts, Aspects and Control Measures

1 Noise impacts to the surrounding community from truck movements

Engine noise from loaded trucks is generally louder than for unloaded trucks when accelerating. Truck drivers are also more likely to use compression brakes when slowing a fully loaded vehicle. The trailers of unloaded trucks entering or leaving the Terminal may rattle as their moving parts are not secured by a container. This noise generated by truck movements could impact nearby residents.

Aspect	Impact	Control Measures
Noise impacts to the community from truck movements	Noise pollution; Annoyance; Generation of complaints; Reputational harm	Patrick uses the 1-Stop scheduling system which spreads the volume of trucks evenly throughout the day. Fines apply to heavy vehicle operators for non-arrival within the allocated time slot.
		Amenities are provided for truck drivers within the Terminal. This removes any need for drivers to use amenities in surrounding local areas via local road networks.
		The CMCC operates the Cargo Efficiency Operations System (CEOS) to support the operational performance measures and to assist in increasing the efficiency, consistency and transparency of landside operations at Port Botany.
		Heavy vehicle access outside of the Port Botany precinct is managed through the National Heavy Vehicle Regulator (NHVR) and the NSW Roads and Maritime Service (RMS). RMS manage compliance and enforcement, vehicle standards, road access and permits on behalf of the NHVR and have direct contact with road carriers in relation to these matters.
		TfNSW holds one formal forum for PB rail/ road operations. **Port Transport Logistics Taskforce (PLTT):** Provides advice to TfNSW on strategies and actions to optimise the movements of containers by rail and road to and from the container terminals at PB.

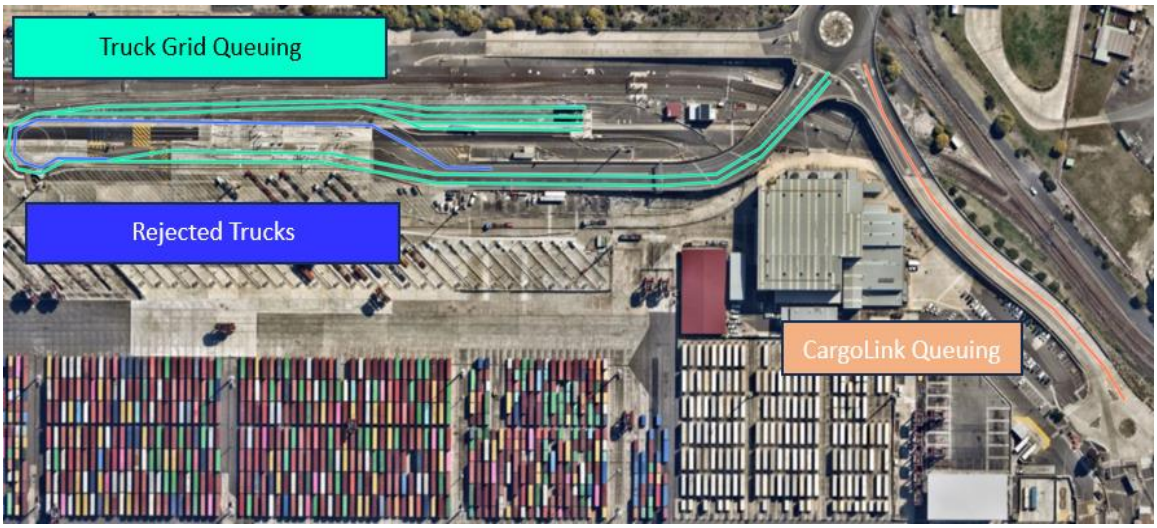
2	Terminal congestion related to throughput and scheduling

The Terminal operates a scheduling system which aims to eliminate waiting times and improve the efficiency of trucks accessing the Terminal. However, it is possible that truck traffic can still impact the surrounding local area by parking along local streets until the allocated access time booked through 1-Stop.

Aspect	Impact	Control Measures
Non-adherence to throughput and scheduling requirements	Terminal congestion resulting in potential safety impacts; Impact to residents by trucks parking on nearby streets	All Patrick personal and contractors/service providers must successfully complete the Patrick site induction prior to being granted access to the Terminal. All short-term visitors must also be provided with a safety induction briefing relevant to the purpose of their visit and be escorted by Patrick Personnel for the duration of their visit.
		Truck drivers will be advised to use designated heavy vehicle routes through the site induction and MSIC requirement. Nonadherence to designated routes is monitored by roving security patrols, drivers failing to satisfy these requirements will be told to leave the site and have their slot cancelled.
		CargoLink Specific • Operates 0600 to 1600 with 20 slots per hour. • These are managed with 2 x MT fork operators to work through the trucks and load pads. • Patrick has implemented a no show fee to limit slot hoarding and early arrival trucks will not be serviced and turned away. • Any truck without a booking is not serviced. • Slots are booked for CargoLink in the same fashion they are booked for VBS through 1-Stop modal portal. • Daily available slots – 300 / Total weekly available slots – 1500 Slots.
		Routine inspections of markings on internal roadways are included in the quarterly environmental inspections of the Terminal.

3	Traffic impacts to the road network from queuing of trucks at the Terminal entry	
The Terminal operates a scheduling system which aims to eliminate waiting times and improve the efficiency of trucks accessing the Terminal. However, it is possible that truck traffic can still impact the surrounding local area by parking along local streets until the allocated access time booked through 1-Stop.		
Aspect	**Impact**	**Control Measures**
Trucks queuing at the Terminal entry	Traffic impacts to the road network; road accident	Heavy vehicles can be turned away via the roundabout at Ramp D in overflow or emergency situations that could otherwise result in queuing at the Terminal entry.
		Patrick will release an average of 54 slots per hour to manage terminal flow and congestion as per PBLIS. Through PBLIS regulations we must release 54 VBS slots per hour. If delays occur in the truck grids the Patrick Yard Shift Manager will monitor queuing via our TOS and 1-stop. If delayed truck queue extends past the terminal truck grid access road the Yard Shift Manager will cancel zones to decrease this rank so as not to impede traffic flow in the precinct. Patrick Yard Shift Manager will cancel zones as far in advance as possible in relation to stoppage/delays to reduce the possibility of further queueing and give notice via 1-Stop to carriers. If required, the Yard Shift Manager will de-process and remove trucks from site if extended delays (30 minutes or more) are predicted. If Patrick is experiencing terminal delays, we will assess the situation and if this will be for an extended period (30 minutes or more), we will look to cancel zones and de-process trucks onsite, notifications will be sent out via 1-Stop. If trucks are de-processed, they will follow exit route as per all other trucks leaving the terminal, these trucks will be informed to depart the terminal by Patrick personnel if required to do so.
		Road carriers are required to register with the TfNSW Cargo Movement Coordination Centre (CMCC). The movements of trucks when in the Port Botany precinct is captured by Automated Number Plate Recognition cameras which are used to record arrival time, queue time, truck turnaround times and the time taken to be serviced by Patrick (and other stevedores).

Figure 6.7.3: Process Overview of Truck Grid Container Exchange & Rejection



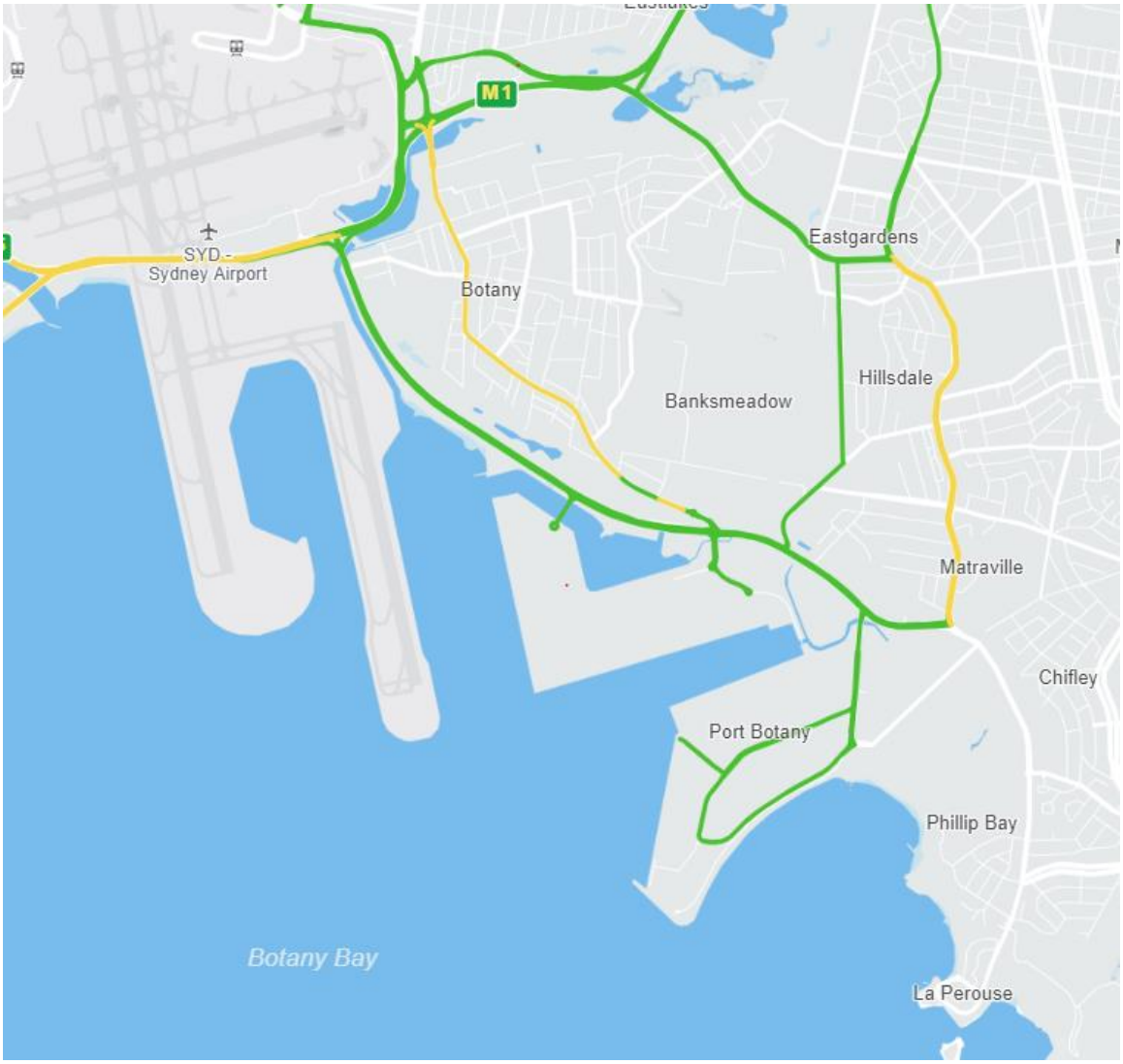
4	Noise and traffic impacts from trucks using non-preferred routes

When trucks have left the Terminal, they are expected to follow designated heavy vehicle routes. These routes are regulated by the Roads and Maritime Services (RMS) in conjunction with the NSW Police. Truck drivers may be fined by NSW Police for deviating from these designated routes unless they hold a permit to do so.

Aspect	Impact	Control Measures
Trucks using non-preferred routes	Noise pollution, annoyance; Increase in traffic on the road network; Generation of complaints; Reputational harm	Patrick is required to comply with the Port Botany Landside Improvement Strategy (PBLIS), established by the NSW Government to manage heavy vehicle movement within Port Botany. Operational performance measures associated with the PBLIS for road include late arrival, early arrival, no show, cancellation of bookings, Truck Turnaround Time (TTT), minimum slots offered, truck non-servicing, and cancellation times.
		Mandatory standards for carriers and stevedores are set out in Part B and C under Part 3 of the *Ports and Maritime Administration Regulation 2012.* Operational performance measures for road include late arrival, early arrival, no show, cancellation of bookings, Truck Turnaround Time (TTT), minimum slots offered, truck non-servicing and cancellation times.
		Drivers who fail to meet the standards for carriers are registered on a driver warning register. Depending on the severity of the breach, drivers can be banned for one to two weeks. Any habitual offenders or those who have committed a serious safety breach will not be provided access to the terminal indefinitely.
		All internal roadways are wide enough to accommodate through traffic and turning two-way traffic where required.
		Driveways are clearly signposted and designed to accommodate the largest vehicle likely to use the site.
		Directional pavement arrows are installed on the bends of internal roads.

Figure 6.7.4: NSW Roads and Maritime Services (RMS) – Restricted Access Vehicle (RAV) Map

(B-Doubles are permitted (green) and permit conditions apply (yellow)



*Source:*https://maps.nhvr.gov.au/?networkLayerContext=NATIONAL_MAP&view=Category&exemptionSetId=-2&networkIds=%5B5509%5D

Monitoring and Reporting

The following controls form part of the traffic monitoring system at the Terminal:

- Conduct monitoring of traffic and noise impacts due to queuing at the Terminal entrance as required (e.g. in the event of a complaint);
- Personnel to report actual or potential traffic and related noise impacts to Patrick management;
- All public inquiries, comments or complaints related to traffic or associated noise impacts will be investigated as per **Section 4.6 - Public Inquiries, Comments and Complaints Handling** of Patrick SAT OEMP; and
- Port Botany traffic issues will be discussed at regular meetings held with NSW Ports, Roads and Maritime Service, NSW Police, other stevedores, and other Port Botany lessees.

Monitoring of road traffic

Road carriers are required to register with the NSW Cargo Movement Coordination Centre (CMCC) and Automatic Number Plate Recognition (ANPR) captures the movements of trucks when in the Port Botany precinct and records arrival time, queue time, truck turnaround times and the time taken to be serviced by the stevedore.

The CMCC also operates a Port Botany Truck Camera which is available at:

Port Botany Truck Cam | Transport for NSW

The operational performance measure (OPM) standards measured for truck carriers and stevedores include:

Road Carriers	Stevedores
Early arrivals	Minimum number of slots offered per hour
Later arrivals	Truck turnaround time
No shows	Truck non-service
Cancellation of bookings (listings)	Time zone cancellations

The CMCC publishes weekly data on penalty trends, throughput volume and truck turnaround time, truck spread, truck trip arrival, truck density and truck turnaround and slot performance. The reports are available at: Port Botany | Transport for NSW

Monitoring of truck traffic

The CMCC operates the Cargo Efficiency Operations System (CEOS) to support the operational performance measures and to assist in increasing the efficiency, consistency and transparency of landside operations at Port Botany. The CEOS is accessed via the Transport for NSW Freight website:

4Port (nsw.gov.au)

Financial penalties for non-compliance with OPM
Road carriers and stevedores are required to adhere to their operational performance measures to be compliant with the mandatory standards. If the standards are not met and the carrier or stevedore is found liable, they must pay a financial penalty to the other party.
Reduction of truck congestion
Patrick has completed Stage 2 of its rail project, with the new 4 x 600m siding in operation serviced by three automated rail mounted gantry cranes (ARMGs). ARMGs. This project aims to increase port side rail capacity from 250,000 to 1 million TEU at Patrick Terminals Sydney Autostrad™. The project aligns with significant investment to increase rail transport of containerised cargo around the greater Sydney region on standardised port shuttle trains through improved intermodal capacity within Greater Sydney, creating a network of metropolitan intermodal terminals directly connected by dedicated freight rail. The second phase of the project will also see improvement in truck queuing with an internal truck loop that introduces a lane allocation system which will improve efficiencies and truck grid utilisation. The internal loop will provide further queuing inside the terminal before the entry point instead of outside on public road resulting in less congestion.
Pedestrian management plan
The interface between pedestrians, mobile plant and vehicles is managed through the implementation of controls that manage the zones where pedestrians can access the site and where mobile plant and/or vehicles may operate within the vicinity of pedestrians. This includes: • Pedestrian walkways are painted and/or delineated with jersey kerb barriers to prevent pedestrian access outside of designated pedestrian pathways. • Signage is posted in various locations directing pedestrians to use the designated pedestrian walkways e.g., at Cargo-link, the Maintenance building, and the vehicle parking area. • In the event, that people are required to access areas of the Automated Yard where auto straddles operate, the specific area is required to be 'Segged out' by the Production Manager before entry is permitted. The 'Segg out' of a specific area will prevent the auto straddles from moving into the area. Access to the Automated Yard is then controlled by Maintenance, following an isolation procedure, and using a lock out tag out system. • All Patrick personal and contractors/service providers must successfully complete the Patrick site induction prior to being granted access to the Terminal. The site inductions advise which areas of the Terminal can be accessed by pedestrians. All short-term visitors are provided with a safety induction briefing relevant to the purpose of their visit and must be escorted by Patrick Personnel for the duration of their visit.

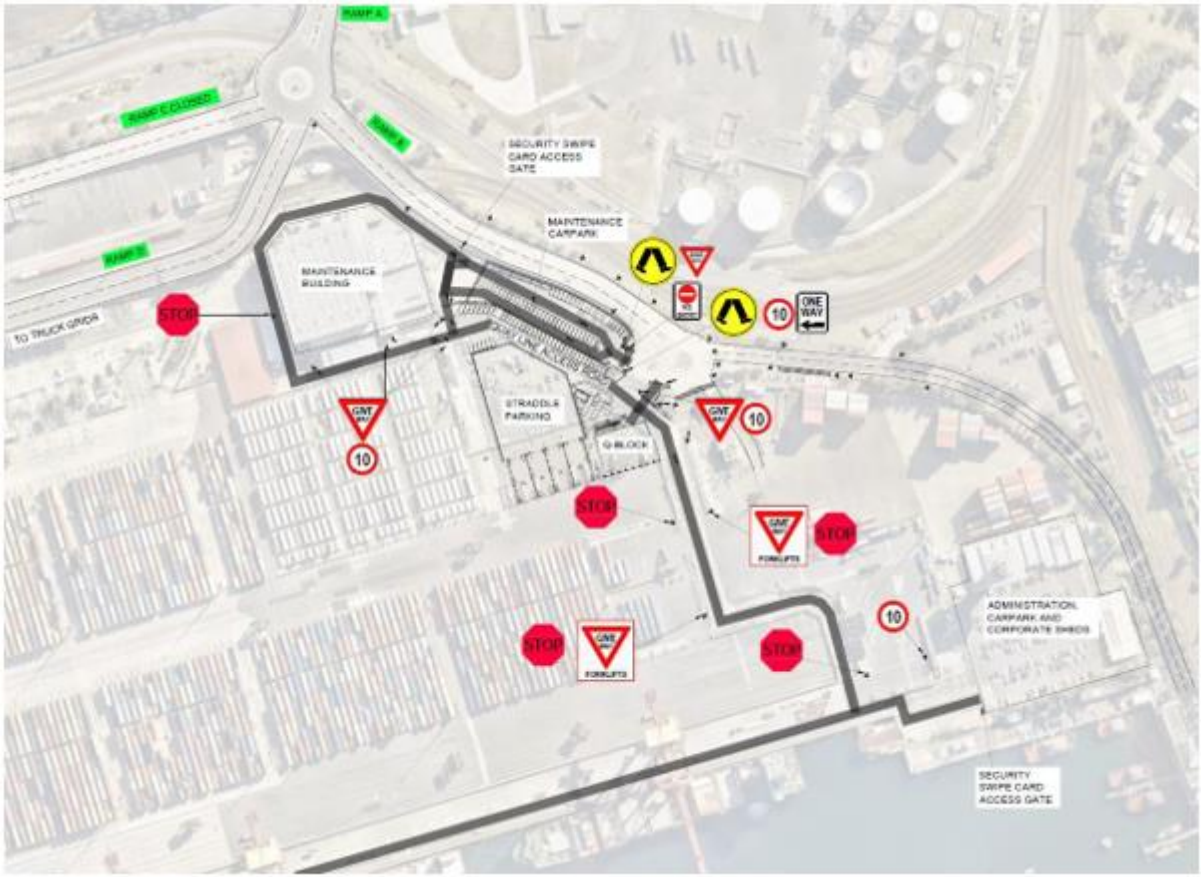
Performance Expectations		
The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.		
Operational Traffic Management – KPIs		
Key Performance Area		**KPI**
1	Traffic noise disturbance and traffic impacts such as congestion or trucks parking in residential streets, expressed as the number of **traffic-related community complaints** attributed to Patrick.	Zero (0) complaints
2	Average Truck Turnaround Time (PBLIS Compliance Requirement).	45 minutes or less (for the first container); and A further 20 mins for every additional container thereafter
3	Number of slots available per hour.	54 slots (minimum)
Traffic Control Plan		
Traffic Control Plans have been generated for SAT. These maps detail the general road arrangement, traffic control features (speed limits, give way, pedestrian crossings etc.) and other traffic-related features of the SAT site. These maps should be presented as part of the site induction process. Refer to Figures 6.7.5 to 6.7.11. These maps should be regularly updated as the SAT site evolves.		

Figure 6.7.5: AREA 1 – CargoLink & Ramp B

Access to the Cargo-link area is via Ramp B. Trucks queue in the right lane along Ramp B as they travel toward the site entrance.

The entrance to Cargo-link is controlled by boom gates

Figure 6.7.6: AREA 2 – Terminal Roads



The Terminal Roads within SAT are limited to 10km/h. Vehicles must give way to forklifts and other large machinery when travelling within the SAT secure area.

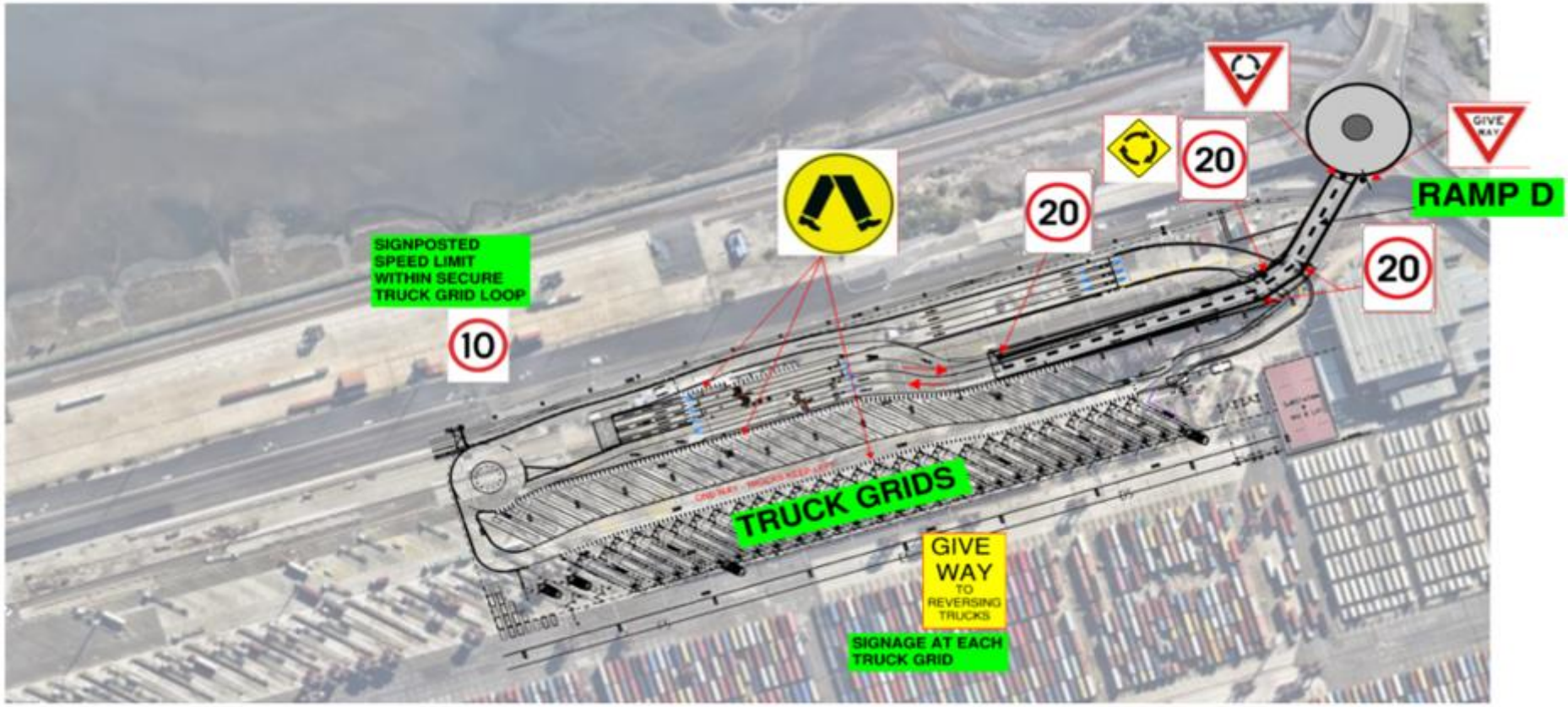
Entry to the terminal roads is via security swipe card access only. Access is via the maintenance building entrance or the administration carpark area entrance.

Figure 6.7.7: AREA 3– Wharf Road

The wharf road is limited to 20km/h, with 10km/h speed limit at either end of the wharf road (i.e. where the road joins the terminal roads).

The road is one lane, with two- way traffic permitted. Vehicles travelling up the wharf have right of way, with vehicles travelling down the wharf to pull off to the side to let oncoming vehicles pass. Vehicles are to stop at each crane to check for suspended loads. Vehicles should never drive under a suspended load.

Figure 6.7.8: AREA 4– Truck Grids and Ramp D



The truck grids are accessed via Ramp D. A speed limit of 10km/h applies to the truck grid area. Entry to the truck grids is controlled via boom gates.

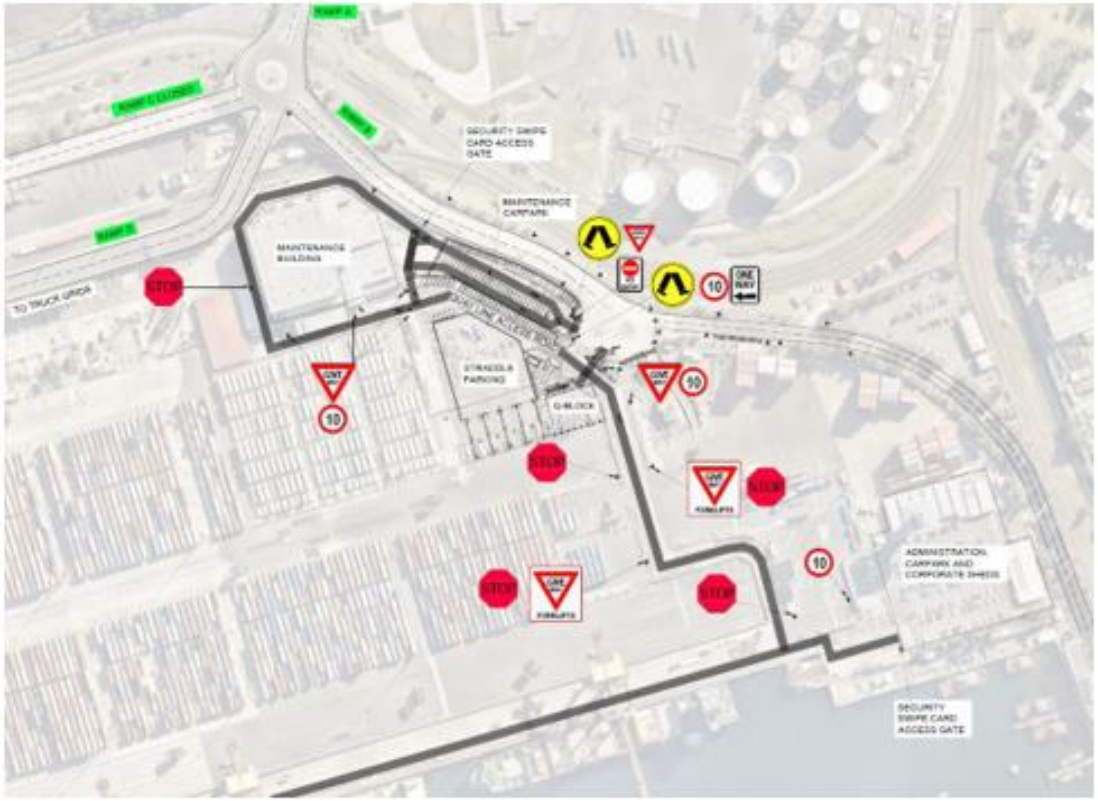
All traffic flow through the truck grid is one way in a clockwise direction.

Figure 6.7.9: AREA 5 – Auto Rail Access Road and Ramp c

The Auto-Rail access road is currently under construction, however in its current state a 10km/h speed limit applies. Ramp C is CLOSED for heavy commercial vehicles at the entry point off the Grade Separation Roundabout.

Only small light weight vehicles can access the ramp to enter the Auto Rail northern road. A digital display board has been erected at the Grade Separation Roundabout advising that this ramp is closed to heavy commercial vehicles.

Figure 6.7.10: AREA 6 – Diesel Decanting Bay Access



1.	Truck proceeds down Ramp B (left lane).
2.	Drives into the Maintenance carpark and waits.
3.	Contacts Patrick Security via mobile (02 9394 0378).
4.	Request for Diesel Decanting Bay Gate to be opened.
5.	Patrick Security opens the gate via electronic access control system.
6.	Once confirmed, drives in through Diesel Decanting Bay Gate. Patrick Security closes the gate.]
7.	Refuels tanks.
8	To exit, calls Patrick Security to open the Maintenance exit gate (MG01).
9.	Patrick Security to open the Maintenance main gate (MG01) vis the electronic access control system.
10.	Drives out the MG01 exit gate.
11.	Exits the Maintenance carpark to leave the Terminal.

Figure 6.7.11: OVERALL SITE PLA (Ramp A, B, C and D)

Ramp A connects Foreshore Road to the Grade Separation Roundabout which intersects all other ramps. Cargo-Link and Maintenance are accessed via the roundabout at the bottom of Ramp B.

The Auto-Rail access road is accessed via Ramp C and Ramp D provides access to the Truck Grids.

Ramp C is **CLOSED** for heavy vehicles at top roundabout. Only small light weight vehicles can access the ramp to enter the Auto Rail northern road.

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting, Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.

6.8 Aviation Operational Impacts Management Plan

Objective
To reduce the potential for impacts to aviation and the neighbouring Sydney Airport Corporation Limited (Sydney Airport) from Terminal operations; and to aid in meeting compliance with the conditions of the Development Consents.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Airports Act 1996 (Cth)* • *Airports (Protection of Airspace) Regulations 1996 (Cth)* • *Civil Aviation Regulations 1988 (Cth)* • *Civil Aviation Safety Regulations 1998 (Cth)* • *Environmental Planning and Assessment Act, 1979 (NSW)* • *Marine Order 32 (Cargo Handling Equipment) 2011 (AMSA)* • *National Parks and Wildlife Act 1974 (NSW)*

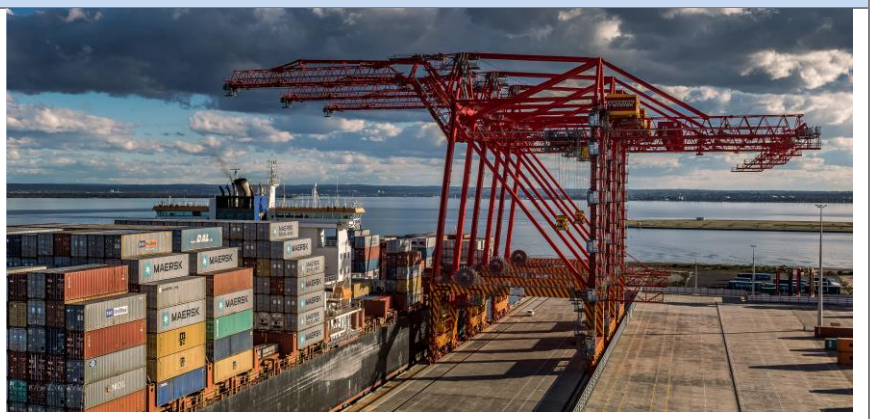
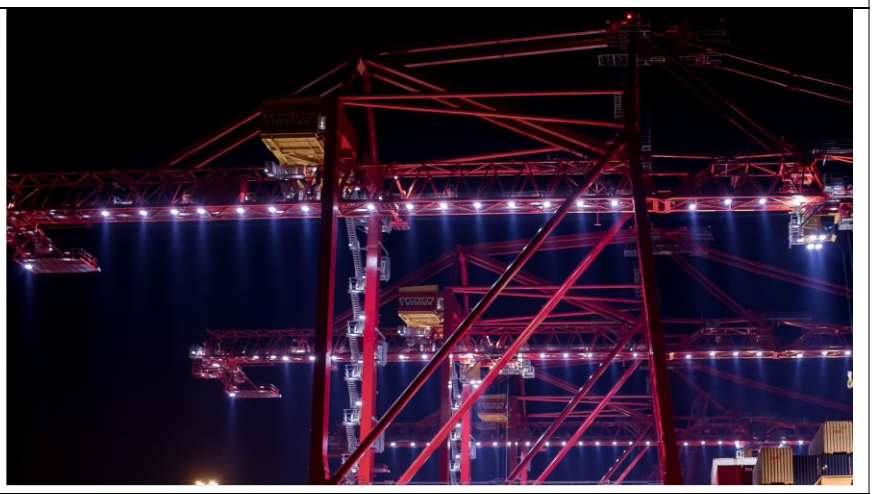
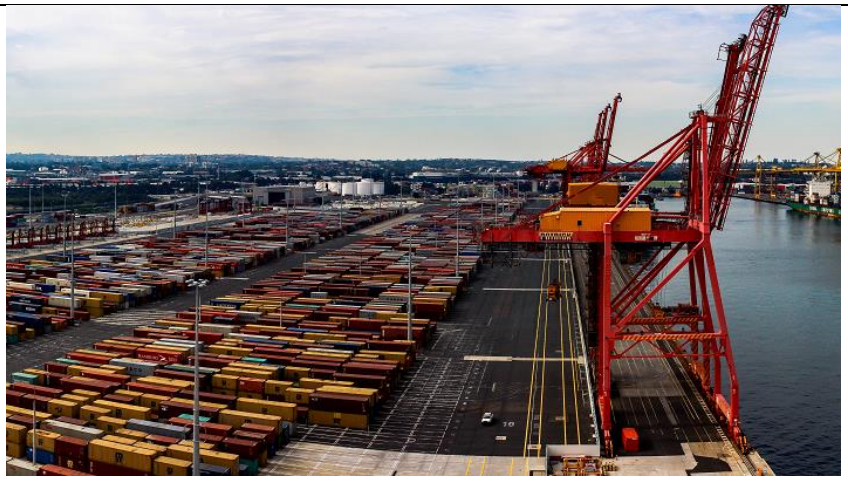
Development Consent DA 494	C2.21, C2.22, C2.23 & C2.24
Development Consent DA 453	3.61
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	25.5, 29.3.3, 29.4 & 30.4.2

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities of** this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.8.1: **Aviation Operational Impacts Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors.	Training Coordinator and/or HSE Manager; Facilities Manager
2	Manage the controls on obstacle limitation surface (OLS) and maintenance of Terminal lighting.	Maintenance Department; Relevant contractors/service providers
3	Monitor light spill from ships and liaise with Ship Master as required.	Shift Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Ship to shore (quay) cranes 12, 13 and 14 located at Berth 6 (closest to Sydney airport) are low profile quay cranes with a knuckle or articulated boom with a boom/beam hinge point design (i.e. the boom does not raise)	
2	Quay crane lights placed on booms and face downwards providing lighting to the stevedore operations below. By design there is limited potential for light to spill upwards. Patrick will continue to trial LED lights on the underside of the quay cranes boom/beams with the aim to improve efficiency.	
3	When vessels are not under stevedore operations, the quay cranes will be boomed up and the lights will be switched off (except the red flashing beacon lights) in order to minimise the light glare or distraction to aircraft pilots.	

Operational Environmental Aspects, Impacts and Control Measures	
1	Terminal lighting and light spill
2	Obstacle Limitation Surface
3	Fixed Terminal infrastructure
4	Bird attraction – Refer to Section 8.9, Bird Hazard Management Plan

Table: 6.8.2: **Aviation Operational Impacts - Operational Environment Aspects, Impacts and Control Measures**

1	**Terminal Lighting and Light Spill**

Operational Environmental

Maritime Order 32 Schedule 1 (2) Lighting requires adequate lighting during loading and unloading activities.

Aspect	Impact	Control Measures
Lighting during ship loading and unloading activities	Distraction to aircraft pilots	Minimise ship board lighting while berthed and/or provide temporary shielding on the ship mounted floodlights while berthed. These controls are facilitated through Patrick's service agreement with each Shipping Line and supported through the Ship Booklet provided to the Ship Master on arrival to the Terminal.
		Vessels are generally berthed facing south, unless otherwise directed to face north by the harbour pilot reducing the light to surrounding residents and nearby aircraft.
		When vessels are not under stevedore operations, the quay crane lights (except the beacon lights) will be switched off in order to minimise the light glare or distraction to aircraft pilots.
		Quay crane lights placed on booms and face downwards.
		Patrick will continue to trial LED lights on the underside of the quay cranes boom/beams with the aim to improve efficiency.

2	Obstacle Limitation Surface	
Operational Environmental		
The Obstacle Limitation Surface (OLS) is a flat plane with a height of 51m above the Australian Height Datum (AHD). This acts as a ceiling for the height of the quay cranes and the ships to be serviced at the Terminal. Under the *Airports (Protection of Airspace) Regulations 1996*, all penetrations of the OLS are classified as obstacles. No penetrations of the OLS are allowed under the legislation without the approval of the Australian Department of Infrastructure and Transport. The height of ships is a separate issue to the height of the fixed terminal equipment and is not specified in the Development Consent.		
Aspect	**Impact**	**Control Measures**
Breach of the OLS by quay cranes and ships at the Terminal	Distraction to aircraft pilots; Potential physical impact with aircraft	Approval by the Australian Department of Infrastructure and Transport is required prior to any ships operating at the Terminal. Any conditions specified by CASA must be complied with by NSW Ports.
		The three ship to shore (quay) cranes 12, 13 and 14 located at Berth 6 (closest to Sydney airport) are low profile quay cranes with a knuckle or articulated boom with a boom/beam hinge point design (i.e. the boom does not raise).
		Approval to penetrate the OLS will be sought from Sydney Airport, CASA and the Australian Department of Infrastructure, Regional Development and Cities, in consultation with NSW Ports, the Port Authority of NSW and the Shipping Line prior to permitting large ships (with masts or antennae which penetrate the OLS) to berth. Conditions relevant to the approval would be implemented.
3	**Fixed Terminal Infrastructure**	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Breach of lateral separation requirement by fixed Terminal infrastructure	Interference with Sydney Airport Radar and navigational system	Lateral separation requirement is considered in quay crane selection and other fixed terminal infrastructure.
		The three ship to shore (quay) cranes 12, 13 and 14 located at Berth 6 (closest to Sydney airport) are low profile quay cranes with a knuckle or articulated boom with a boom/beam hinge point design (i.e. the boom does not raise).
		Cooperation with NSW Ports and Airservices during testing and recalibration of airport radar and navigational systems when fixed terminal operating infrastructure is in place.

Monitoring and Reporting

Routine monitoring relies on visual inspections and the diligence of all employees and contractors/service providers to identify any potential aviation impacts at the Terminal and report them to their frontline manager who will raise an event in the Patrick's HSE reporting database. Details of these events will also be entered into the Terminal Environmental, and Public Comments/Inquiries/Complaints Register, the results analysed and where necessary, subsequent corrective actions proposed by the HSE Manager and Operations and/or Engineering & Maintenance Manager (or representative).

Events are reported at least weekly by the HSE Manager who will periodically report on any trends. The results will be used for various reporting obligations - refer to the **Environmental Reporting, Section 4.4** of this OEMP.

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.8.3: **Aviation Operational Impacts Management – KPIs**

	Key Performance Area	KPI
1	Regular visual inspection of the Terminal to verify that control measures are in place and to identify and potential aviation hazards (including nests or large number of birds).	Zero (0) hazards
2	Airport-related complaints including light-spill, radar interference; expressed as the number of aviation complaints.	Zero (0) complaints

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting**, **Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.

6.9 Bird Hazard Management Plan

Objective
To minimise the attraction of bird species that pose a risk to aircraft movements, or nuisance at the Terminal; and to aid compliance in meeting the conditions of the Development Consents.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Biodiversity Conservation Act 2016 (Cth)* • *Civil Aviation Regulations 1988 (Cth)* • *Environmental Planning and Assessment Act, 1979 (NSW)* • *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* • *National Parks and Wildlife Act 1974 (NSW)*

Development Consent DA 494	C2.25
Development Consent DA 453	NA
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	Chapter 29 Bird Hazard, Section 34.4 Waste disposal

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.9.1: **Bird Hazard Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors	Training Coordinator and/or HSE Manager; Facilities Manager
2	Regular inspection of any bird hazards and maintenance of controls.	Facilities Manager; HSE Manager
3	Report on any identified bird hazard at least weekly and periodically report on any trends.	Facilities Manager; HSE Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Maintenance workshop entrance open for movement of mobile plant in/out – installation of bird control measures (perch spikes) to minimise the available surfaces for birds for roost along the top of beams.	
	Use netting to limit access into the Workshop, and Substation B	 
2	Visual inspection of light poles for nests.	

Operational Environmental Aspects, Impacts and Control Measures	
1	Bird attraction to the Terminal
2	Attraction of birds to berthed vessels, container storage areas and Maintenance workshop

Table: 6.9.2: **Bird Hazard - Operational Environmental Aspects, Impacts and Control Measures**

1	**Bird attraction to the Terminal**

Operational Environmental

Large numbers of birds, or any number of large birds, flying close to or across an airport on a regular basis are considered to be a bird hazard because of the potential for "bird strike", defined as a collision between a bird and an aircraft and is referred to as an air safety incident under the *Civil Aviation Regulation 1988 (Cth)*. While most bird strikes cause little or no damage to aircraft, some incidents can be fatal or very costly in terms of aircraft damage and aircraft downtime. Statistics show that 90% of bird strikes occur at or near airports.

The most common species involved in bird strike at Sydney Airport are Silver Gull (43%), Nankeen Kestrel (19%), Feral Pigeon (6%), Galah (4%) and Fruit Bat (4%) based on Hutchinson (1999) who estimated 356 bird strikes at Sydney Airport between 1988 and 1999. Other species account for the rest of the incidents, including Black Swan, Australian Pelican, Australian White Ibis, Black-Shouldered Kite, White-Bellied Sea Eagle, and a range of species associated with grasslands and/or buildings.

Silver Gulls have been a notable hazard at Sydney Airport since the first north-south runway was constructed across the shoreline into Botany Bay (between 1965 and 1972). A primary reason for this is that the runway lies across major flight paths of Silver Gulls foraging along the shoreline or moving between roost sites in Botany Bay and foraging sites in metropolitan Sydney.

Nankeen Kestrels account for a significant portion of bird strikes because the species nests and forages in the grasslands at Sydney Airport.

Aspect	Impact	Control Measures
Attraction of birds to the Terminal by wind-blown litter, ponded surface water, structures and lighting	Distraction to aircraft pilots; Birds in aircraft flight paths; Bird strike; Nuisance	No eating is permitted outside of the building.
		Use of enclosed rubbish bins.
		Control of littering through signage, induction training and regular tool box talks.
		No bird feeding permitted.
		Regular collection of waste to reduce overflow and wind-blown litter.
		The design of rooves and guttering of terminal buildings to deny birds the opportunities to roost and make nests.
		Remove ponded water from site as soon as practicable and reasonable.
		Patrick personnel are required to report any aviation hazards or the presence of nesting or injured wildlife, including any eggs.

1	Bird attraction to the Terminal *(continued)*	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Attraction of birds to the Terminal by wind-blown litter, ponded surface water, structures and lighting	Distraction to aircraft pilots; Birds in aircraft flight paths; Bird strike; Nuisance	If proved necessary, engage a specialist lighting consultant to provide advice on terminal lighting to deter insects which are food for birds. Patrick will consult with the Sydney Airport Wildlife Management Group for implementation of any dispersal or harassment protocols (or any other method of bird removal). If required, deterrent systems would be employed to prevent the build-up of birds at the Terminal, e.g.: • Flagging or streamers –material flapping in the wind; can be effective in deterring birds from landing close by; • Perch spikes – can be installed on structures such as posts which provide roosts for species such as Cormorants, Australian Pelicans and Silver Gulls; • Netting and/or fishing lines strung across bird landing paths – the lines frighten birds when they attempt to land and come into contact with the “invisible” line; • Distress calls – designed to scare birds away; • Cracker shells – are cartridges fired from a shotgun causing an explosion in mid-air to frighten birds. Known to be effective in most situations when used at random, but may need to be used in combination with other devices as a long-term solution; and • Strobes or moving spotlights – work best in a dark environment and may be less effective where there is a lot of light from other sources, for example wharf areas which are illuminated at night. • D-Ter Insect & Bird Repellent – regular application required as the birds will disappear almost immediately for several months and come back again. Bird deterrent methods like cracker shells, which are likely to have a significant deterrent impact on migratory shorebirds using Penrhyn Estuary, should only be used during periods when most migratory species are absent (i.e. from early May to late June), and only on advice from a shorebird ecologist. At the first signs of a deterrent system failing to work, alternative methods would be used to supplement or replace the existing bird deterrent system.

2	Bird attraction to berthed vessels, container storage areas and Maintenance workshop	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Attraction of birds to berthed vessels, container storage areas and Maintenance workshop	Distraction to aircraft pilots; Birds in aircraft flight paths; Bird strike; Nuisance	Where containers have leaked grain, the area where the grain has leaked onto is swept up as soon as practicable.
		Liaise with vessels on arrival to ensure there are no birds on board.
		Bird feeding or fishing not allowed from the vessel while berthed.
		Bird control measures include: • Perch spikes to minimise the available surfaces for birds for roost along the top of beams; and • Netting strung across bird landing paths – the lines frighten birds when they attempt to land and come into contact with the "invisible" line.
		Use of minimal ship lighting while berthed.
		Bird hazard management strategies to be undertaken in consultation with the Department of Transport and Regional Services, Sydney Airport Corporation and Botany and Randwick Councils.

Monitoring and Reporting

The purpose of monitoring is to determine whether birds are starting to habituate or build up in large numbers so that this can be addressed at a very early stage rather than later when remedial action may be more difficult.

Routine monitoring relies on visual inspections and the diligence of all employees and contractors/service providers to identify any potential bird hazards at the Terminal and report them to their frontline manager who will raise an event in the Patrick's HSE reporting database. This includes monitoring after nightfall to determine whether birds are attracted to the site to roost. Immediate bird deterrent action is to be implemented if roosting birds are observed on site.

Details of these events will also be entered into the Terminal Environmental, and Public Comments/Inquiries/Complaints Register, the results analysed and where necessary subsequent corrective actions proposed by the HSE Manager and Operations and/or Engineering & Maintenance Manager (or representative).

Events are reported at least weekly by the HSE Manager who will periodically report on any trends. The results will be used for various reporting obligations refer to **Section 4.4 - Environmental Reporting** of this OEMP.

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.9.3: **Bird Hazard Management – KPIs**

	Key Performance Area	KPI
1	Regular visual inspection of the Terminal to identify bird hazards (e.g. nests or large number of birds), and to verify that control measures are in place to deter birds from the site.	Zero (0)
2	The number of times problem birds need to be actively managed at the Patrick's terminal, expressed as the number of bird hazard management events per 100,000 TEU.	Zero per 100,000 TEU
3	The number of shorebird management events per 100,000 TEU.	Zero per 100,000 TEU

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement of** this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting**, **Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.

6.10 Vegetation and Land Management Plan

Objective
To ensure that all landscaped and revegetated areas are maintained in a tidy and healthy state, preventing the spread of potentially invasive weeds. In addition, to ensure trees do not obscure road signs. To ensure sealed surfaces are maintained and repaired promptly to reduce the risk of land being contaminated in the event of a leak or spill.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Biodiversity Conservation Act 2016 (NSW)* • *Biosecurity Act 2015 (NSW)* • *Environmental Planning and Assessment Act 1979 (NSW)* • *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Cth)* • *Contaminated Land Management Act 1997*

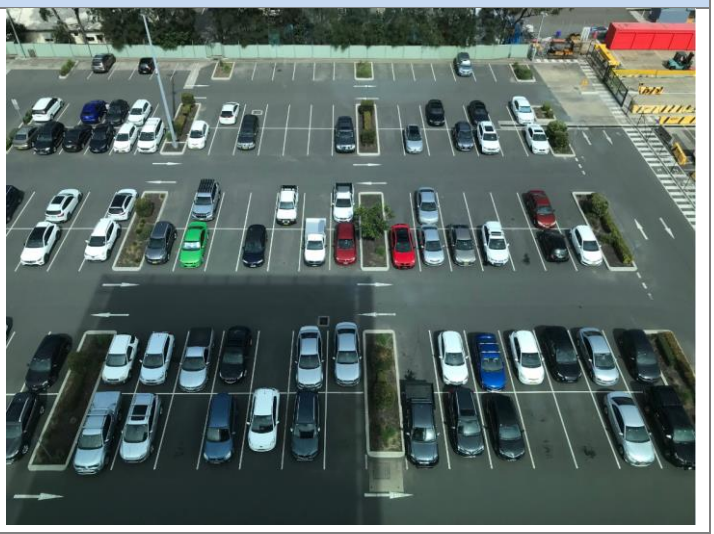
Development Consent DA 494	NA
Development Consent DA 453	3.57, 3.58, 3.59, 3.60 & 6.4(b)
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	Ch. 19 – Aquatic ecology, & Ch. 20 – Terrestrial ecology

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.10.1: **Vegetation and Land Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors	Training Coordinator and/or HSE Manager; Facilities Manager
2	Maintenance of landscaped areas, including watering and weed management	Facilities Manager; Relevant contractors/service providers
3	Conduct quarterly site environmental inspections, which include review of weed management programs, view condition of sealed surfaces.	Facilities Manager; HSE Manager
4	Conduct safety inspections, which include the condition of sealed road surface	HSE Manager; Facilities Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Tower / Administration Building car park - Landscaping - Sealed surface	
2	Maintenance car park - Landscaping - Sealed surface	

Operational Environmental Aspects, Impacts, and Control Measures	
1	Threatened Ecological Communities (TECs) and species, and other matters of National Environmental Significance (NES)
2	Inadequate weed control, unapproved herbicide use
3	Lack of water to landscaped areas
4	Poorly maintained landscaping
5	Sealed ground surface exposing soil

Table: 6.10.2: **Vegetation and Land - Operation Environmental Aspects, Impacts and Control Measures**

1	**Threatened Ecological Communities (TECs) and species, and other matters of National Environmental Significance (NES)**

Operational Environmental

There are three TECs listed under the EPBC Act as potentially occurring in the region. Prior to the development consent for the PBT terminal upgrade, the Atlas of NSW Wildlife database identified 24 TECs listed under the *Threatened Species Conservation Act 1995* (now superseded by the *Biodiversity Conservation Act 2016*) that have been mapped in the region. No TECs were mapped within the site.

There are 13 threatened flora species listed under the EPBC Act as potentially occurring in the region. Prior to development consent for the PBT upgrade, the Atlas of NSW Wildlife database identified 14 threatened flora species listed under the repealed *Threatened Species Conservation Act 1995* previously recorded in the region. Of these, one threatened flora species, *Acacia terminalis subsp. terminalis* (Sunshine Wattle), has previously been recorded within close proximity to the site. No potential habitat for threatened flora species is known to occur on the site.

There is one wetland of international significance (Ramsar Wetland), the Towra Point Aquatic Reserve, within the vicinity of the site. The Towra Point Aquatic Reserve is situated on the southern shores of Botany Bay, approximately 2.5 kilometres south of the site. This reserve contains most of the seagrass, mangroves and saltmarshes within Botany Bay and contains refuge areas from fishing (URS, 2003). No matters of NES are known to occur within the site.

Aspect	Impact	Control Measures
Presence of threatened ecological communities and species at the Terminal	Loss of threatened ecological communities and/or species	There are no threatened ecological communities known to be mapped within the Patrick site.
		There is no known potential habitat for threatened flora species within the site.
		One threatened flora species, *Acacia terminalis subsp. terminalis* (Sunshine Wattle), has previously been recorded within close proximity to the site, but is not known to occur on the site.

2	Inadequate weed control, unapproved herbicide use	
Operational Environmental		
Landscaping within the Terminal is limited to shrubs and plantings associated with staff car parks, and on the perimeter of the site along the access road to the Administration Building, along the Cargo Link car park (Gate B110) and at the entrance to the Maintenance car park.		
Aspect	**Impact**	**Control Measures**
Little or no weed control, unapproved herbicide used	Spread of weeds (including potentially invasive species); Water contamination	Ensure only approved herbicides (i.e. Glyphosate) are used for the control of weeds on site to ensure harmful contaminants are not present in site runoff. Application for new herbicides must be completed using the Change Management form and approved by the HSE Manager prior to use.
		Record dates of herbicide applications in the Terminal maintenance and scheduling system, Maximo.
		Use experienced landscaping contractors with training in correct application and use of herbicides.
3	**Lack of water to landscaped areas**	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Lack of water to landscaped areas	Shrubs and plantings die	Plant drought tolerant species.
		Landscaped areas watered by hand as required.
		Replace any dead or missing shrubs or plantings.
4	**Poorly maintained landscaping**	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Poorly maintained landscaping	Negative response from stakeholders, including NSW Ports; Shrubs and plantings die	Ensure landscaped areas are regularly maintained and trimmed back.
		Ensure weed management activities are conducted regularly to controls the spread of weeds (including potentially invasive species).
		Replace dead or missing shrubs and plantings where required.

5	Seal ground surface exposing soil	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Sealed ground surface affected by weather and traffic exposing soil	Leaked or spilt chemicals / fuel / oil contaminate the soil / land	Conduct regular inspections of the terminal's sealed ground surfaces.
		Arrange for sealed surfaces have areas of exposed soil/land to be promptly sealed.
		Under the Contaminated Land Management Act, Patrick has a duty to inform the EPA of any contamination resulting from activities at the terminal.

Monitoring and Reporting

Initial landscaping

Landscaping details for the development include, soil and mulch, hand watering, retaining wall, fencing, and hard surfaces. Includes car parking and measures to prevent vehicles from encroaching onto landscaped areas.

Maintenance of landscaped areas

A program is in place to ensure that all landscaped and revegetated areas are maintained in a tidy, healthy state.

Invasive weeds

All invasive weeds, as listed under the NSW *Biosecurity Act 2015* (previously legislated by the *Noxious Weeds Act 1993*), are removed from site. Appropriate management of weeds on site is carried out:

- where practicable, weed infested areas will be sprayed with a herbicide and left in situ;
  - Glyphosate based herbicides (non-selective post emergent) are the most commonly used herbicide in natural environments and is the assumed herbicide type unless otherwise stated.
- where it has not been practical to spray weeds, they will be removed from the site and disposed of as green waste. Invasive weeds will be removed to landfill; and
- any use of herbicides will be strictly in accordance with the label directions and the Safety Data Sheet.

Watering plantings

Hand watering is carried out on a routine basis by contractors who tend and maintain the vegetation at the Terminal.

Biosecurity – quarantine controls

The Australian Government Department of Agriculture and Water Resources (DAWR), through Biosecurity manages quarantine controls at Australian borders, including Port Botany, to prevent, respond to and recover from pests and diseases that threaten the economy and environment. Patrick provides assistance to DAWR when they attend site to conduct regular inspections as required. (Refer to **Section 6.3, Feral Animals and Biosecurity Management Plan of** this OEMP.)

Environmental Monitoring

Due to the limited vegetation on site, monitoring activities are undertaken during quarterly environmental inspections that include a review of the presence/growth weed species and effectiveness of weed control.

Monitoring and Reporting *continued*

Aquatic Ecology

The management and monitoring of the effects of port development on specific aquatic ecology of Foreshore Beach and Penrhyn Estuary is covered in section 3 of the Penrhyn Estuary Habitat Enhancement Plan (PEHEP) (March 2007) located on the Port Authority of NSW website:

https://www.portauthoritynsw.com.au/media/1084/pehep_report_execsummary.pdf.

Monitoring of the PEHEP is managed by Cardno on behalf of the Port Authority of NSW – refer to:

https://www.portauthoritynsw.com.au/sustainability-and-environment/penrhyn-estuary-rehabilitation/

The results are summarised in the Port Botany Post-Construction Environmental Monitoring – Annual Report 2016, 20 February 2018 located on the Port Authority of NSW website:

https://www.portauthoritynsw.com.au/media/2968/el1112046-port-botany-annual-report-2016-v2.pdf

Terrestrial Ecology

The habitat management and maintenance of saltmarsh is covered in Appendix C of the Penrhyn Estuary Habitat Enhancement Plan (March 2007) located on the Port Authority of NSW website:

https://www.portauthoritynsw.com.au/media/1084/pehep_report_execsummary.pdf.

The results are summarised in the Port Botany Post-Construction Environmental Monitoring – Saltmarsh Summary Report April 2016, 11 August 2016 located on the Port Authority of NSW website:

https://www.portauthoritynsw.com.au/media/2830/el1112046-port-botany-saltmarsh-summary-report-april-2016-final-v2.pdf

The habitat management and maintenance of mangroves is addressed in section 3.1.3 of the Penrhyn Estuary Habitat Enhancement Plan (March 2007) located on the Port Authority of NSW website:

https://www.portauthoritynsw.com.au/media/1084/pehep_report_execsummary.pdf.

The results are summarised in the Port Botany Post-Construction Environmental Monitoring – Annual Report 2016, 20 February 2018 located on the Port Authority of NSW website:

www.portauthoritynsw.com.au/media/2968/el1112046-port-botany-annual-report-2016-v2.pdf

Records

The Facilities Manager will maintain records of herbicide use, and the HSE Manager will record the site environmental inspections.

Performance Expectations		
The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.		
Table: 6.10.3: **Vegetation and Land Management – KPIs**		
Key Performance Area		**KPI**
1	Received vegetation and/or land-related complaints attributed to the terminal operation.	Zero (0) complaints
2	Review Vegetation and Land Management Plan and records with Facilities Manager.	Once per year
3	Weed management achieved using designated chemical control. (Note: No other herbicides permitted to be used without a change management form raised and approved)	Glyphosate herbicide (nil use of any other herbicide)
4	Conduct site environmental inspections which include weed management control.	Four times per year (quarterly)
5	Landscaping in a healthy state, routinely maintained and vegetation replaced where required.	Part of the site inspection – four times per year (quarterly)
6	Conduct safety inspections which includes sealed surfaces.	Two times per year (6-monthly)

Review and Improvement
The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP. Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting**, **Section 4.4** of this OEMP. Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.

6.11 Energy and Resources Management Plan

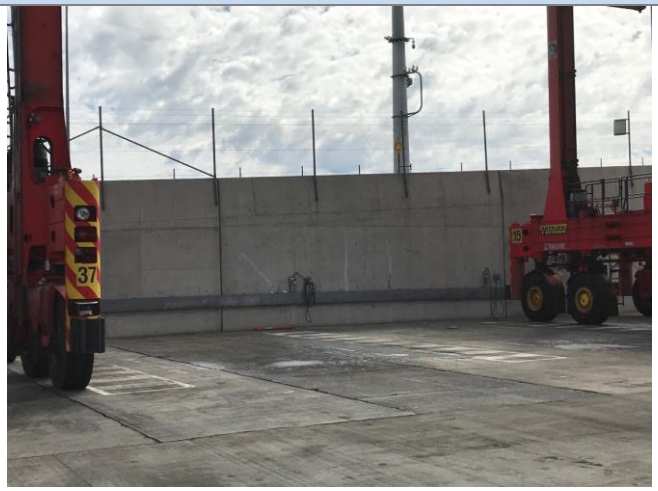
Objective
To minimise the use of natural resources and increase efficiencies in energy use at the Terminal; and to ensure Patrick meet their NPI and NGERs reporting obligations under the *Protection of the Environment (General) Regulation 2009 (NSW)* and the *National Greenhouse and Energy Reporting Act 2007* respectively.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Botany Bay Council Development Control Plan – Energy Efficiency 2000* • *Environmental Planning and Assessment Act 1979 (NSW)* • *National Greenhouse and Energy Reporting Act 2007 (NGER Act) (Cth)* • *National Pollutant Inventory National Environment Protection Measure (NPI NEPM) (Cth)* • *Protection of the Environment (General) Regulation 2009 (NSW)* • *Protection of the Environment Operations Act 1997 (NSW)* The NPI NEPM provides the framework for the development and establishment of the NPI, which is an internet database designed to provide publicly available information on the types and amounts of certain substances being emitted to the air, land and water. The NPI is implemented cooperatively by the Federal Government, the EPA and other state and territory governments. All facilities that use NPI substances at levels above certain thresholds must report any emissions of those NPI substances. Patrick are required to report on fuel and energy use across all operational activities. In NSW the requirement to report emissions through the NPI is enforced through the *Protection of the Environment Operations (General) Regulation 2009*. Patrick is also obligated to report on operational greenhouse gas emissions, and energy and water consumption under section 19 of the NGER Act using the Emission and Energy Reporting System (EERS). This data is collected at the end of the financial year for each of the four Patrick Terminals and reported as one set of data to the Regulator.

Development Consent DA 494	NA
Development Consent DA 453	7.25
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	Chapter 35 – Energy

Key Tasks and Responsibilities		
A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below. **Table: 6.11.1**: **Energy and Resources Management – Key Tasks and Responsibilities**		
Task		**Responsibility**
1	Induction and training of Patrick employees, contractors and visitors.	Training Coordinator and/or HSE Manager; Facilities Manager
2	Maintenance of operational plant and equipment.	Maintenance Department; Relevant contractors/service providers
3	Implementation of energy and water savings initiatives.	Plant Operators; Operations Department; Engineering & Maintenance Department; HSE Manager
4	Evaluation and purchase of energy and water efficient equipment.	Engineering & Maintenance Department
5	Prepare and submit to the EPA Annual NPI Reports on fuel and energy use under the NPI NEPM and the *Protection of the Environment (General) Regulation 2009*.	Nat. ECS Manager
6	Preparation and submission of the Energy Efficiency Compliance Report in accordance with CoA 7.25, DA 453. The Report shall certify that energy efficiency measures have been installed and verify that the building's energy performance complies with Councils Energy Efficiency DCP. A copy of the Report shall be made available to Council on request.	HSE Manager
7	Prepare an Energy Action Plan in accordance with EIS Prediction 35.4.	HSE Manager
8	Prepare and submit to the Regulator annual reports on operational greenhouse gas emissions, and energy and water consumption under the NGER Act using the Emission and Energy Reporting System (EERS).	Nat. ECS Manager

Examples of Operational Activities & Controls		
#	**Description**	**Photo**
1	Solar Panels on the roof of Engineering & Maintenance Building for heating hot water.	
2	Solar Panels on the roof of the Amenities attached to the Tower/Administration Building for heating hot water.	
4	LED lights on power poles	

#	Description	Photo
5	In 2015 manually operated straddles which were solely fuelled by diesel were replaced with AutoStrads which are powered using diesel and electricity.	
6	Rainwater is collected from the rooves of the Maintenance Buildings and Workshop in 3 x 20,000L plastic tanks. This water is used for flushing toilets and urinals in the building.	
7	Rainwater collected from the rooves of the Tower/Administration Building is collected in 2 x 20,000L plastic tanks. This water is used for flushing toilets and urinals in the building.	

Operational Environment Aspects, Impacts, and Control Measures	
1	Use of electricity and natural gas
2	Rainwater collection and use
3	Fuel use at the Terminal
4	Fuel use for transport

Table: 6.11.2: **Energy and Resources - Operational Environment Aspects, Impacts & Control Measures**

1	**Use of electricity and natural gas**

Operational Environment		
Aspect	**Impact**	**Control Measures**
Use of electricity and gas for lighting, heating and cooling, appliances etc.	Depletion of natural resources; Air pollution	Patrick has installed energy efficient systems in new buildings including low energy lighting, climate control air-conditioning with sensors in zones on each floor. External walls in the Tower/Administration and Engineering & Maintenance Buildings are predominately fitted with large glass windows allowing additional light into the buildings (these glass windows are tinted and fitted with block-out blinds to control heat and light).
		LED lights are fitted on crane booms and on power poles at the Terminal, replacing less energy efficient lighting systems. Patrick will review internal and external lighting and upgrade to more efficient lighting types where practicable.
		Ensure all appliances, electronics, refrigeration and air-conditioning units, lighting and power units are certified energy efficient.
		Utilise lighting that efficiently directs the light into the area required, thereby minimising energy consumption and waste light.
		Promote energy savings: • Use efficient electrical installations with sensor switching. • Use timer switches for high voltage security lighting. • Use natural lighting where practicable. • Switch off all stand-by equipment and office lighting at the end of each day.
		Prepare an Energy Efficiency Compliance Report certifying that energy efficiency measures have been installed and verify that the building's energy performance complies with Councils Energy Efficiency DCP (Per DA 453 condition 7.25 - a copy to be made available to Council on request.)
		Use of renewable energy sources, e.g.: • Solar power panels on the Engineering & Maintenance Building, and Amenities Building. Patrick will investigate the purchase of electricity from local renewable sources.

2	Rainwater collection and use	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Rainwater is collected from the rooves in two separate locations – Maintenance Building and Workshop; and Tower/Administration Building (includes Amenities)	Depletion of natural resources	There are 3x 20,000L rainwater storage tanks along the northern side of the Maintenance workshop. The water collected is used for flushing toilets and urinals.
		There are 2x 20,000L rainwater storage tanks behind the Tower/Administration building. The water collected is used for flushing toilets and urinals.
		Water usage us monitoring by the HSE Manager to track trends. Water use at the Terminal is reported annually to the Regulator as part of NGERs requirements.
		Water use at the Terminal is reported annually to the Regulator as part of NGERs requirements.

3	Fuel use at the Terminal	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Use of fuel (e.g. LPG, diesel, ULP) for vehicles, AutoStrads, mobile plant and equipment, generators etc.	Depletion of natural resources; Air pollution	Plant and equipment are operated and maintained in accordance with acceptable industry standards and will be turned off when not in use.
		The AutoStrads are powered using diesel and electricity and replaced manually operated straddles which were solely fuelled by diesel.
		Truck drivers are encouraged to switch off their engines when waiting in the truck grid or holding areas.
		The increase in rail mode share of container freight movement is promoted at the Terminal and a condition of the lease agreement.
		Regular inspections, maintenance and servicing of plant and equipment is conducted to ensure optimal running performance and reduce fuel wastage.

4	Fuel use for transport

Operational Environmental

NSW Ports reports the investment in rail infrastructure will reduce the growth in truck movements around the port. When fully operational this investment will reduce truck-kilometres travelled in Sydney by at least 10 million per year. This is estimated to save over 2 million litres of diesel per year which is the equivalent to a net reduction in CO_2 emissions of more than 5,400 tonnes a year. Patrick's agreement with NSW Ports will significantly increase the terminal's rail capacity and enhance efficiency in container movements at the port.

Patrick's investment with NSW Ports in rail infrastructure will significantly increase the Terminal's rail capacity and enhance efficiency in container movements at the port; this in turn will reduce the number of trucks required to visit the Terminal.

Monitoring and Reporting

NPI Reporting is required to be submitted to the EPA for emissions generated, primarily due to fuel and energy use. Fuel and energy use data is submitted to the Nat. ECS Manager by the HSE Manager from each Patrick Terminal, and the National Finance Manager. The Nat. ECS Manager compiles this information and reports to the NSW EPA annually as required in accordance with provided guidelines.

NGERs Reporting is required to be submitted to the Clean Energy Regulator. Greenhouse gas emissions, and energy and water consumption data will be submitted to the National Environment, Compliance & Security by the HSE Manager from each Patrick Terminal, and the National Finance Manager. The Nat. ECS Manager compiles this information and reports to the Regulator annually as required. To monitor KPIs, the following information will be recorded:

- Total fuel purchased by Patrick;
- Fuel used by site vehicles, operational plant and equipment; and
- Total electricity and natural gas consumption including plant, buildings and structures.

An Energy Efficiency Compliance Report is required to be prepared certifying that energy efficiency measures have been installed and verifying that the building's energy performance complies with Councils Energy Efficiency DCP. An Energy Management Action Plan will be developed in accordance with EIS Prediction 35.4. Actions to reduce energy use and improve the energy performance of the Terminal will be documented, implemented and closed-out as appropriate.

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.11.3: **Energy and Resource Management – KPIs**

	Key Performance Area	KPI
1	Fuel consumption expressed in litres per TEU	Downward trend
2	Electricity Consumption expressed in kilowatt hours per TEU	Downward trend
3	Water Consumption expressed in litres per TEU	Downward trend
4	Submission of NPI and NGERs Reports to the Regulator by the due date	Annual submission
5	Close-out of Actions from the Energy Management Action Plan by due date	Close-out of 100% of actions by due date

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 - Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting**, **Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.

6.12 Biosecurity and Customs (unpack containers) Management Plan

Objective
To manage biosecurity risks through the implementation of the appropriate controls; an obtain written approval from Australia Border Force (Customs) to open (i.e. unpack) any container(s) on the terminal.

Statutory Requirements and Legislative Framework
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Biosecurity Regulation 2016 (C. 58 First point of entry biosecurity standards (ports)) (Cth)* • *Customs Act 1901 (s. 102DA Unpacking of goods in container at cargo terminal) (Cth)*

Development Consent DA 494	NA
Development Consent DA 453	NA
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	NA

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 - Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.12.1: **Biosecurity and Customs (unpack containers) Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Induction and training of Patrick employees, contractors and visitors.	Training Coordinator and/or HSE Manager; Facilities Manager
2	Liaise with NSW Ports, Port Authority NSW and other port operators for biosecurity management.	HSE Manager
3	Establish a First Point of Entry (FPOE) Biosecurity Incident Response Procedure (BIRP) for the terminal and obtain Department of Agriculture and Water Resources approval (DAWR) and integrate into the terminal's ERP.	HSE Manager
4	Obtain written approval from an Australian Border Force (ABF) officer prior to opening any container on the terminal (including – import, export full or empty, transhipment, Customs cleared).	HSE Manager
5	Ensure all containers remain closed and if are required to be opened (i.e. unpacked) this is not done so until Patrick receives written approval from ABF.	Yard Managers, Shift Managers, Landside Manager, Stevedoring Manager, Operations Manager

Example of Operational Activities & Controls		
#	**Description**	**Photo**
1	Biosecurity posters are displayed on site	
Operation Environmental Aspects and Impacts, and Control Measures		
1	Biosecurity risk on an arriving vessel e.g. hitchhiker pest, ant nests in the port precinct, soil contamination on exterior of container	
2	Unpacking (i.e. opening) a container without obtaining written approval from an ABF officer.	

Table: 6.12.2: Biosecurity & Customs Operational Environmental Aspects, Impacts and Control Measures

1	**Biosecurity risk on an arriving vessel**	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Biosecurity risk on an arriving vessel e.g. hitchhiker pests, ant nests in the port precinct, soil contamination on exterior of container	Biosecurity risk; Potential health impacts; Nuisance; Property damage	Site induction includes biosecurity risks. Posters displayed across the Terminal. Biosecurity Bin established containing necessary equipment. Routinely inspected and maintained accordingly. First Point of Entry (FPOE) Biosecurity Incident Response Procedure (BIRP) approved by DAWR, has been integrated into the terminal's **Emergency Response Plan (PBT_HSE_PLN_09_01).** - Awareness - Isolate - Contain - Report - Treat

2	Unpacking (i.e. opening) a container without obtaining written approval from Australian Border Force	
Operational Environmental		
Aspect	**Impact**	**Control Measures**
Cargo supply chain risk - organised crime and criminal infiltration	Customs risk; Potential health impacts; Nuisance; Property damage	Site induction includes Customs risk.
		Make application to ABF for approval to unpack (i.e. open) a container, until which time the container remains intact and unopened.
		Shift and Yard Managers are aware of the procedural requirements and will only unpack (i.e. open) the container on receipt of written approval from an ABF officer.

Monitoring and Reporting

Routine monitoring relies on visual inspections and the diligence of all employees and contractors to report any biosecurity threats found within the Terminal, and ensure written approval is received from an ABF officer prior to opening (i.e. unpacking) any container on the terminal and report them to their frontline manager who will raise an event in the Patrick's HSE reporting database.

Events are reported at weekly by the HSE Manager who will report monthly on any trends. The results will be used for various reporting obligations refer to **Section 4.4 - Environmental Reporting,** of this OEMP.

With reference to: *Australia Government Customs Act 1901 – Section 102DA*

Cargo handlers working at cargo terminals on wharves and at airports handling international cargo have obligations under Part VAAA of the Customs Act 1901 (Customs Act) to ensure the security of goods under customs control. These obligations strengthen the cargo supply chain against organised crime and criminal infiltration.

They are statutory obligations and non-compliance is a strict liability offence under the Customs Act. Cargo terminal operators also have obligations under the Customs Act and may share some of the same obligations as cargo handlers (refer to Factsheet: Cargo terminal operator obligations under the Customs Act 1901).

A. Cargo terminal cannot open a container without written ABF approval:

Goods in a container at a cargo terminal must not be unpacked (i.e. opened) unless the cargo handler (i.e. Patrick) has written approval from an Australian Border Force (ABF) officer. As the cargo handler, Patrick can request the local ABF office for approval to open (i.e. unpack) the container. This approval is intended for exceptional circumstances, for example, where cargo has been damaged in transit and requires repacking. Approvals to unpack are conditional and granted for a specified time, location and container.

Definition of a container:

- Types of Containers – Full, empty, refrigerated, flat rack, out of gauge i.e. over height, over width etc
- Category of Container – import, export, restow, trans-shipment, Customs cleared

Definition of unpacking a container:

Unpacking a container includes opening the container doors to check/inspect, the container floor bowing, and/or the cargo of the container breaching, falling out of or being emptied out of the container.

B. Patrick's obligation:

Patrick (cargo handler) must not allow the container (includes import, export full or empty, trans-shipment, out of gauge and/or Customs cleared etc) to be opened (i.e. unpacked) for inspection, or the contents removed, emptied, fallen out etc) without written approval of the local ABF officer.

Potential circumstances where unpacking/opening a container may be required:

- Live animal cargo e.g. transferring a horse from a container to a horse float/transporter etc
- Damage or suspected damage to the inside of a type of container and/or the cargo/contents require inspection to determine if the container is safe to transport (i.e. chain of responsibility) or if the cargo needs to be repacked into a new container.

  Note: In the event the cargo is required to be removed from a damaged container and repacked into a new container, Patrick must report the new container number to ABF.

C. Making application to Australian Border Force (ABF) for approval to unpack (open) a container:

Create an email to ABF, such as:

Subject: *Patrick Port Botany making application under section 102DA (Customs Act 1901) for Customs clearance to open/unpack containers (in specific) circumstances*

Under section 102DA of the Customs Act 1901, Patrick is seeking approval to open/unpack <insert number> containers <insert container numbers>, which arrived on Import Vessel <insert name> - Voyage Number <insert>, at Patrick's Port Botany Terminal (s15 wharf), Penryhn Road, Port Botany.

The purpose of opening these containers is to: <select whichever is applicable, or add in an appropriate explanation>

- *Check if the container(s) can be safely transported by road.*
- *Check if the contents of the container has been damaged and/or caused the cargo to leak from the container.*
- *In a controlled manner allow the live animals to disembark from the container and be loaded onto a horse float / road transport vehicle to be transported from the terminal.*

Send the email to:

- Australian Border Force Supply Chain Operations - SupplyChainOpsNSW@abf.gov.au

Record application details in the SAT's Register: *Applications Made to ABF (Customs) for written approval 102DA (Customs Act) to – open-Unpack a container*

- Update the terminal Register recording the details of the application to the ABF (including any details related to repacking the container etc)
- File approval letter / correspondence from ABF

D. On receipt of written approval from ABF

- Forward onto the duty Yard / Shift Manager, Landside Manager and Stevedoring Manager
- File the written approval
- Update the terminal's Application to ABF Register

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.12.3: **Biosecurity and Customs (unpack containers) Management – KPIs**

	Key Performance Area	KPI
1	Review the Biosecurity Incident Response Plan (as part of the terminal's Emergency Response Plan).	Every 3 years
2	Inspection of the Biosecurity Bin, and items replaced promptly.	Every 2nd month
3	Compliance with section 102DA of the Customs Act 1901 i.e. obtained written approval from ABF prior to opening (i.e. unpacking) any container on the terminal.	Zero (0) non-compliances
4	Monitor performance and report trends.	Annually

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting, Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing,** of this OEMP.

6.13 Sustainability Management Plan

Objective
Consistent with the intent of Patrick's HSE Policy, Patrick has a commitment to the NSW Ports Green Ports Checklist (GPC) published by NSW Ports. These guidelines encourage port developers and operators to adopt sustainable business approaches and encourage innovation in design and operation through resource selection and environmental quality. The sustainability objective of the Patrick 2022 HSE Strategic Plan is to: "*Introduce a waste management system that measures waste produced at the Terminal with a focus on maximising recycling opportunities and recording, reporting and responding to data so that a plan can be introduced to reduce waste*".

Statutory Requirements and Legislative Framework	
The legislation and other compliance requirements that apply to the implementation of this management plan are listed below: • *Environmental Planning and Assessment Act 1979 (NSW)* • *NSW Ports Green Ports Checklist (GPC), undated*	
Development Consent DA 494	NA
Development Consent DA 453	NA
EPA Licence 6962	NA
Sydney Water Discharge Industrial Wastewater Consent 24990	NA
Sydney Water Trade Wastewater Discharge Schedule Permit 40110	NA
EIS Prediction and Conclusion	NA

Key Tasks and Responsibilities

A comprehensive list of responsibilities, accountabilities and authorities is provided in **Section 4.2 – Environmental Duties and Responsibilities** of this OEMP. The key responsibilities for the implementation of operational controls are provided in the table below.

Table: 6.13.1: **Sustainability Management – Key Tasks and Responsibilities**

	Task	Responsibility
1	Complete the Green Port Checklist.	HSE Manager
2	Monitor resource selection and environmental quality.	HSE Manager
3	Report performance based on resource selection and environmental quality.	HSE Manager

Monitoring and Reporting

In the Green Ports Checklist each of the environmental issues contains a series of goals in the form of criteria to be considered or addressed. NSW Ports requires demonstration of implementation of the Green Port Checklist during the design, construction and operation of Port facilities.

- Resource selection (materials selection, waste management, water consumption, energy use, and transportation); and
- Environmental quality (indoor environment; emissions, water quality, land use and environmental management).

Performance Expectations

The implementation of this management plan and its effectiveness will be measured by the Key Performance Indicators (KPIs) provided in the table below.

Table: 6.13.2: **Sustainability Management – KPIs**

	Key Performance Area	KPI
1	Complete the Green Port Checklist.	Annually
2	Monitor performance and report trends.	Annually

Review and Improvement

The review and amendment of this management plan will be in accordance with **Section 5 – Review and Improvement** of this OEMP.

Any inquiries, comments and/or complaints directly or indirectly received from the public shall be managed in accordance with the **Public Inquiries, Comments and Complaints Handling, Section 4.6** and reported in accordance with the **Environmental Reporting, Section 4.4** of this OEMP.

Periodic environmental inspections and audits will be carried out in accordance with **Section 4.5 - Environmental Inspection and Auditing** of this OEMP.