SUSTAINABILITY PLAN 2015

NSW Ports

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MESSAGE
FROM THE CHAIRMAN

Sustainability is vital to our business. Not only are we operating under 99-year leases – requiring an approach that must sustain the life of those leases – we operate in a global environment in which both trade volumes and community expectations for environmental outcomes are increasing.

If we're to meet future demand, we must focus on sustainable growth. This Sustainability Plan represents our commitment to develop and operate our business in an environmentally responsible manner in accordance with sound commercial practice. It complements and supports our blueprint for growth *Navigating the Future: NSW Ports' 30 Year Master Plan.*

By anticipating the challenges ahead, and suggesting practical responses to meet these challenges, this Sustainability Plan will ensure that we manage land, infrastructure and resources efficiently and responsibly to support long-term objectives.

It adopts and encourages innovative approaches and looks at how we can recycle or reuse materials to reduce our ecological footprint. It acknowledges how important landside logistics and infrastructure are to our aspirations for sustainable growth, and promotes additional freight on rail and efficiency improvements in road transport.

We will only achieve sustainable growth if we continually strive to improve our environmental performance while also meeting commercial requirements and minimising risks. Building partnerships and collaborative approaches with our many stakeholders – including government, stevedores, transport and logistics companies, and local communities – are essential to this objective.

Our aim is for this Sustainability Plan to be a strategic document that influences the longer-term sustainability approaches of all those we work with. We look forward to working together to respond to local, national and international challenges – helping to create a sustainable, safe and productive future.

Paul McClintock AO
Chairman

NSW PORTS
ENVIRONMENT POLICY

NSW Ports manages two of Australia's major seaports. In operating as a successful business, we will ensure we incorporate environmental considerations into relevant decision making.

We will meet our obligations and strive to continually improve our environmental performance by adopting the following principles:

Planning

- Providing adequate resources, equipment and training for employees at all levels to fulfil their responsibilities in relation to the environment and their work practices.
- Implementing systems, standards and processes to enable our activities to be carried out with regard to our environmental responsibilities.
- Developing measurable environmental objectives and targets, including prevention of pollution.
- Conducting regular reviews of the company's environmental performance and implementing improvements as required.
- Addressing sustainable principles to improve our economic, environmental, social and cultural performance.
- Understanding future environmental risks and adapting to build capacity and ensure the longevity of the Ports' infrastructure and operations.

Practices

- Including environmental considerations in our decision-making and business planning.
- Assessing and seeking to minimise the environmental impacts of our activities on the natural environment and our local communities.
- Identifying and reporting to senior management and the Board environmental hazards, near misses, incidents and impacts, and corrective and preventative actions taken.
- Ensuring compliance with all applicable environmental laws, regulations, policies and procedures.
- Striving to use resources efficiently, minimise waste, conserve biodiversity and prevent pollution.
- Monitoring our environmental performance.
- Maintaining emergency, fire protection and security systems and facilities to protect the environment.

People

- Appointing capable people with appropriate skills and experience to carry out their work in a manner that is compatible with sound environmental performance and this policy.
- Communicating with relevant stakeholders in relation to the company's environmental management activities.
- Working within our role as landlord to encourage and support our tenants and port users to focus on continually improving their environmental and sustainability performance.
- Ensuring employees, contractors and visitors who work at, or make use of, company facilities are aware of their obligation to operate in a manner that fulfils the organisation's environmental obligations and requirements.

NSW PORTS:
A SUSTAINABLE BUSINESS

To operate a successful port and intermodal business, our activities must be sustainable.

Sustainability means achieving the economic potential of NSW Ports' assets through efficiency, innovation and appropriate development; preserving and enhancing environmental and social values; and fostering a network of constructive relationships with stakeholders.

This Sustainability Plan provides a strategic framework for progressing towards environmental sustainability. It highlights current sustainable practices and identifies a path for future actions in both the short and long term.

The Sustainability Plan identifies five focus areas:

1. Transport and logistics
2. Land use planning and development
3. Local environmental outcomes
4. Resource conservation and efficiency
5. Stakeholder consultation and relations.

The Plan supports *Navigating the Future: NSW Ports' 30 Year Master Plan* that will guide port development and infrastructure investment over the next 30 years. It is also consistent with the principles of the NSW Ports Environment Policy that considers environmental aspects and embeds sustainability across all elements of our business.

Assets we manage

This Sustainability Plan applies to the portfolio of infrastructure assets we lease from the NSW Government: Port Botany, Port Kembla, Cooks River Intermodal Terminal and Enfield Intermodal Logistics Centre (Enfield ILC). These assets play a vital role in the economies of Sydney, Illawarra and NSW.

Port Botany

Port Botany is NSW's only container port and the largest bulk liquid and gas port. The Port is a major international gateway for freight and is strategically important for the economic growth and prosperity of NSW. Port Botany operates 24 hours a day, seven days a week.

In the 2014-15 financial year, Port Botany handled 2.3 million twenty-foot equivalent units (TEUs) through three operational container terminals. More than 1,418 vessels visited the Port.

The Port provides critical infrastructure for bulk liquid and gas trades, including berthing and storage facilities, and is the only liquefied petroleum gas (LPG) import and export facility in NSW. In 2014-15, approximately 4.7 million kL of bulk liquid and gas product were exchanged through two bulk liquids berths.

The Port precinct provides related services such as: berthing facilities for tugs, lines boats, pilot vessels and bunker barges; empty container parks; trucking services; warehouse pack-and-unpack facilities; Department of Immigration and Border Protection (formerly Australian Customs and Border Protection Service); emergency response; and vessel traffic services facilities.

Port Kembla

Port Kembla is the only significant bulk port in southern NSW. It is Australia's largest vehicle import facility, has the largest grain handling terminal on the East Coast and has the second largest coal export facility in NSW. The Port services significant steel, iron ore and bulk product markets and operates 24 hours a day, seven days a week.

In 2014-15, Port Kembla handled about 390,000 motor vehicles, 700,000 tonnes of grain exports, 13.8 million tonnes of coal and coke exports, 4.6 million tonnes of steel raw material imports and 433,000 kL of bulk liquids. Significant volumes of cement clinker, copper concentrates and a range of general cargoes were also handled. More than 850 vessels visited the Port.

Port Kembla's coal, grain and other bulk trades are principally handled by rail. Motor vehicles are moved entirely by road. Port-related facilities essential for the efficient and safe operation of Port Kembla, including berthing facilities for tugs, lines boats and pilot vessels, are located within the Port precinct.

Cooks River Intermodal Terminal

Cooks River Intermodal Terminal on Canal Road, St Peters has operated since 1947. It has a direct freight rail connection to Port Botany via the Port Botany Freight Rail Line and utilises both road and rail for the inward and outward movement of containers.

Cooks River Intermodal Terminal comprises 17 hectares for empty and full containers, rail sidings for the loading and unloading of containers, and other ancillary container-related services such as repair, washing and upgrading of containers. It operates 24 hours a day, seven days a week and has a storage capacity of 15,000 TEUs.

Enfield Intermodal Logistics Centre

The Enfield ILC will commence operations in 2015 as a key freight transport link in Sydney's network of existing and planned intermodal terminal facilities. It occupies 60 hectares and, when fully operational, will include the intermodal terminal, empty container storage areas, container storage facilities and warehousing.

The site is linked to Port Botany by a dedicated, 18 kilometre freight rail line. The intermodal terminal has planning approval to handle 300,000 TEUs per annum by rail. Operations will occur 24 hours a day, seven days a week.

Our role

As the land manager of the ports and intermodal terminals, we are responsible for:

- strategically planning for future trade and infrastructure requirements
- developing key port infrastructure
- managing leases and licences held by tenants
- engaging with regulators and the community regarding policy, development and operational matters.

We have established overarching principles for environmental management and promote the responsible and sustainable use of assets by tenants and users.

Our staff, based at Port Botany, Port Kembla and Enfield, are encouraged to actively participate in sustainability initiatives and suggest improvement measures.

Our stakeholders

We operate ports and intermodal terminals that are hubs for business activity within urban communities. Many stakeholders play a part in, and are impacted by, the operation of these facilities. Our approach to environmental management and sustainability respects the priorities of stakeholders with effective and transparent communication and consultation at its heart. Key stakeholder groups are described below.

Port and intermodal tenants

Tenants occupy land under leases or licences administered by NSW Ports. Major tenants operate terminals for the storage and transfer of cargo. Other tenancies may be held by port service providers such as towage and lines services, or regulators such as Port Authority of NSW. As landlord, we actively work with tenants to promote good environmental practice, and incorporate sustainability principles into tenant lease requirements and new developments.

Shipping, logistics and supply chain companies

This broad group of businesses utilises the ports and/or intermodal facilities without necessarily occupying land within those sites. Businesses include shipping lines, charterers, trucking companies, rail operators, custom brokers and freight forwarders, marine surveyors, and cargo inspectors. We encourage these stakeholders to operate in a safe, clean and environmentally responsible manner through industry liaison groups and consultation.

Government agencies

Various Commonwealth, State and local government agencies perform a range of regulatory functions in and around the ports and intermodal facilities. Agencies involved in the sustainability of ports, intermodal terminals and supply chains are:

- Commonwealth: Department of Infrastructure and Regional Development, Infrastructure Australia, Department of the Environment, Australian Maritime Safety Authority, Department of Agriculture (Biosecurity) and the Australian Border Force.
- State: Transport for NSW, Infrastructure NSW, Roads and Maritime Services, Department of Planning and Environment, Environment Protection Authority and the Office of Environment and Heritage.
- Local government: City of Botany Bay, Randwick City Council, Wollongong City Council, Strathfield Council, Bankstown City Council and Marrickville Council.

Ongoing liaison with government stakeholders includes meetings, participation in consultation groups, submission of plans and reports in compliance with approval conditions, input to policy and regulatory initiatives, and responding to incidents and complaints.

Local communities

Each site operates in urban environments close to housing, businesses, community facilities and recreational areas. We liaise with community representatives through regular consultation meetings for our Port Botany, Port Kembla and Enfield sites which allow an exchange of information between the community, NSW Ports and our tenants and operators.

NSW Ports participates in community sponsorship opportunities and information sharing initiatives, such as local school presentations. We also provide information for the public on our website and respond to feedback regarding operations at the facilities.

FOCUS AREAS AND GOALS FOR SUSTAINABILITY

We have identified five focus areas for sustainability and have set goals for each area.

1 TRANSPORT AND LOGISTICS

- To support commercial shipping as the most efficient mode of transport by providing and maintaining port infrastructure to meet demand.
- To deliver and actively promote the increased use of rail transport as an efficient means of moving cargo to and from the ports.
- To collaborate with stakeholders to improve the efficiency of road transport in and around the ports and intermodal facilities.

2 DEVELOPMENT AND LAND USE PLANNING

- To identify and promote the development of infrastructure for expected long-term increases in trade volumes.
- To work with the State and local governments to promote the compatible development of ports, intermodal facilities and surrounding communities.
- To promote sustainable design and operations at the ports and intermodal terminals.
- To assess the likely impacts of climate change on NSW Ports assets and adapt as necessary to ensure their long-term resilience.

3 LOCAL ENVIRONMENTAL OUTCOMES

- To maintain local environmental values and the amenity of communities as port and intermodal operations grow to service the NSW economy.

4 RESOURCE CONSERVATION AND EFFICIENCY

- To minimise resource consumption and waste through the better use of land, infrastructure, renewable energy and recycled materials.

5 STAKEHOLDER CONSULTATION AND RELATIONS

- To proactively and openly engage with stakeholders to ensure a coordinated and transparent approach to sustainability.

Discussion around each focus area includes two types of measures to achieve sustainability goals:

STRATEGIC DIRECTIONS

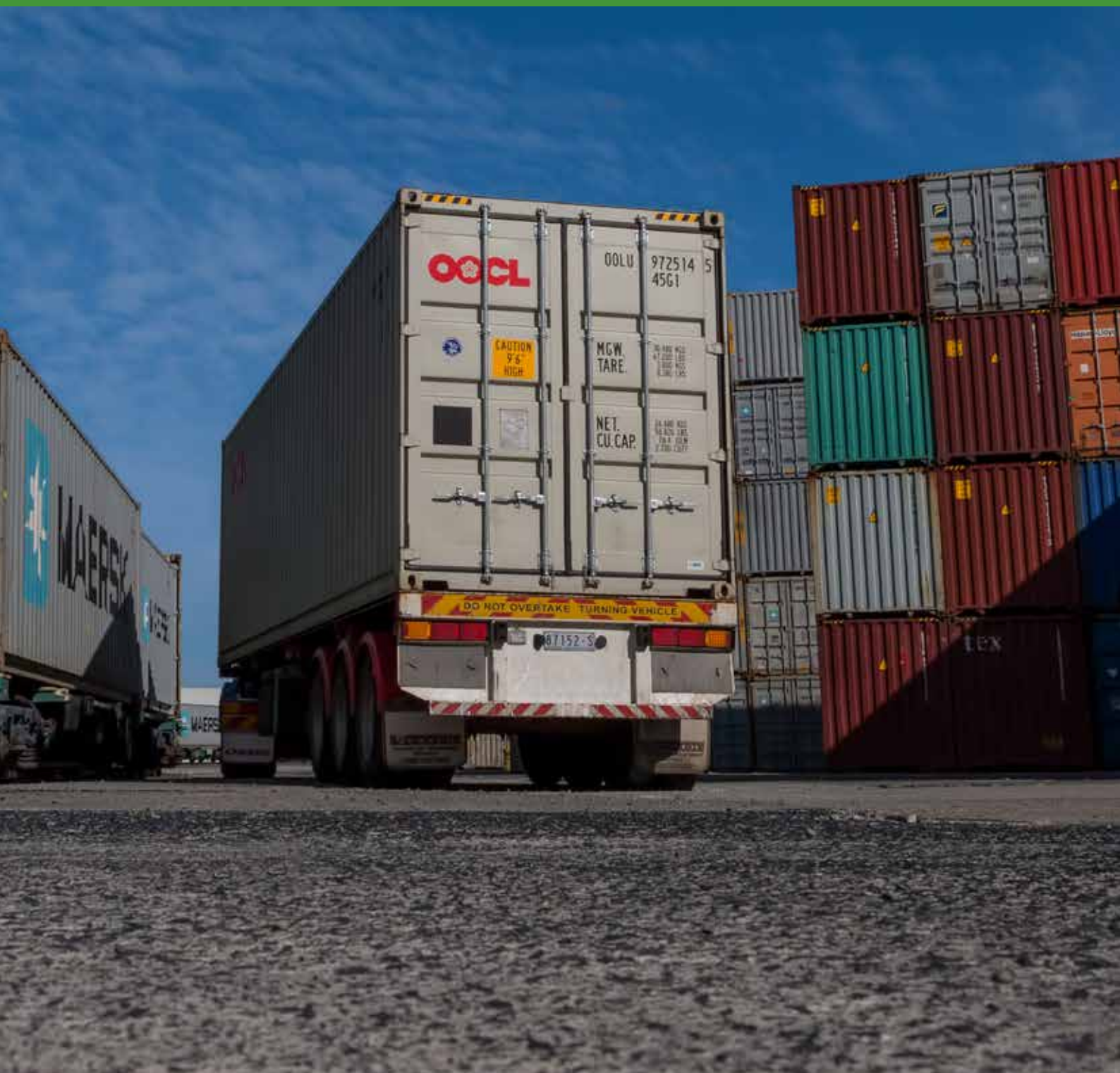
The long-term initiatives and targets we will pursue, generally in partnership with stakeholders.

SHORT-TERM ACTIONS AND MILESTONES

The specific programs and projects we will undertake or facilitate in the next three years.

Appendix A lists short-term actions and milestones.

FOCUS AREA 1:
TRANSPORT AND LOGISTICS



Efficient Shipping

GOAL

To support commercial shipping as the most efficient mode of transport by providing and maintaining port infrastructure to meet demand.

Shipping is the most efficient mode for transportation of goods – it would require hundreds of freight aircraft, kilometres of rail cars and fleets of trucks to carry the goods that can fit on one large ship. Over 99 per cent of Australia's international imports and exports are carried by commercial shipping.

While individual ships vary in size and capacity, container ships calling at Port Botany can transport up to 6,000 TEU containers of finished goods and products, and car carriers calling at Port Kembla can handle up to 6,800 cars on a single voyage.

Shipping is also the most carbon-efficient mode of transportation. Shipping produces less CO_2 emissions for each tonne transported than air, rail or road transport. While ships transport about 17 per cent of the domestic freight task within Australia, they only produce seven per cent of the combined greenhouse gases from this sector (BITRE, 2009 and 2014).

Shipping a tonne of goods 1,160 kilometres from Sydney to Melbourne instead of 877 kilometres overland by truck reduces CO_2 emissions by 162 kilograms.

The shipping industry is significantly reducing its environmental impact. A recent study found that the fuel efficiency of container ships (4,500 TEU capacity) improved 35 per cent between 1985 and 2008 (World Shipping Council, 2015). Modifying the engines of older ships can increase fuel efficiency by up to 20 per cent. These changes will result in further reductions in greenhouse gas emissions from shipping in the future (AUSMEPA, 2014).

It is more environmentally efficient to receive vessels with a larger freight carrying capacity than receiving multiple smaller ships. The World Shipping Council (2015) reported that the carbon efficiency of a modern 2007-built 12,000 TEU ship is 75 per cent better on a per volume-mile basis than a 1976-built 1,500 TEU vessel.

We will continue to maintain, expand and update port infrastructure as necessary to handle future shipping requirements. Most container ships servicing Port Botany have a capacity of less than 5,000 TEUs; however, in line with the long-term global trend towards larger container ships, vessels with a carrying capacity of over 6,000 TEUs are now visiting the Port.

Larger vessels require deeper channels and berthing boxes, larger berth structures, additional mooring capacity and larger cargo handling equipment such as quay cranes and shiploaders. The second bulk liquids berth at Port Botany caters for larger vessels than its predecessor, with the ability to accommodate vessels up to 270 metres long with capacity of 120,000 dead weight tonnes (DWT). *Navigating the Future: NSW Ports' 30 Year Master Plan* identifies options for additional berths and deeper channels at the ports to cater for future growth in shipping.

We undertake maintenance dredging as necessary to maintain navigable depths in Port Kembla Harbour and at Port Botany's Brotherson Dock. The preferred technique for routine maintenance is sea bed levelling, which re-distributes accumulations of sediment within the port. As visits by large, deep draft vessels increase over the next five years, our maintenance dredging activities will safely accommodate these more efficient vessels.

In the longer term, deeper channels may be required to accommodate the next generation of larger vessels seeking access to the ports. With targeted capital dredging, Port Botany could handle 10,000 TEU vessels or larger and Long Range 2 tankers (up to 160,000 DWT) without restriction. Port Kembla has scope for new berths to be developed within the Outer Harbour to accommodate large bulk carriers and container vessels.

Capital and maintenance dredging works are managed in accordance with the water quality measures described in Focus Area 3 of this Plan.

When fully operational, the Enfield ILC is predicted to reduce vehicle kilometres travelled by nearly 6.6 million kilometres per annum, saving more than two million litres in diesel fuel consumption by trucks. This equates to a net reduction in CO_2 emissions of 993 tonnes per annum.

(SKM, 2005)

Efficient Rail Transport

GOAL

To deliver and actively promote the increased use of rail transport as an efficient means of moving cargo to and from the ports.

Rail freight is up to 23 times more energy efficient than road freight, and results in less congestion on the road network. Rail transport also contributes to reductions in air pollution, with road freight producing more than ten times as much carbon pollution as rail freight per tonne-kilometre (ARA, 2014).

Our future trade forecasts indicate that Port Botany container trade will likely increase to between 7.5 million and 8.4 million TEUs by 2045. Trade at Port Kembla is projected to increase to over 40 million revenue tonnes by 2045.

An improved landside logistics network is essential to facilitate growing volumes of trade, and rail is an integral part of the supply chain solution to reduce reliance on the road network. The efficient movement of containers by rail from Port Botany, and in future from Port Kembla with the possible construction of the Maldon-Dombarton Rail Link, will be vital to sustainable growth.

We have set a target for Port Botany of three million TEU per year to be transported by rail by 2045. To achieve this, we are working with all tenants and stakeholders regarding the operational and infrastructure requirements to support this objective. *Navigating the Future: NSW Ports' 30 Year Master Plan* provides further guidance on future rail infrastructure requirements.

We manage Port Kembla's extensive freight rail infrastructure. The Inner Harbour network receives coal and grain for export and the Outer Harbour system receives copper concentrates for export and dispatches steel products for domestic processing and consumption.

The typical proportions of Port Kembla export cargoes received by rail are:

- 60 per cent of coal
- 90 per cent of grain
- 100 per cent of copper concentrates.

We are working with our tenants to further develop rail infrastructure at Port Kembla to meet expected growth in trade. The Quattro grain terminal, currently under construction, will include a rail unloading facility and we expect 90 per cent of grain exported through the terminal to be received by rail.

We chair an active Rail User Group in Port Kembla and are members of the Port Botany Rail User Group. Both groups aim to improve efficiency within the port supply chain.

To support the objective of increased volumes of container freight transported by rail, a network of intermodal terminals throughout Sydney with dedicated freight rail connections to Port Botany and greater NSW is crucial.

The Enfield ILC will increase the volume of containers transported by rail, reducing the number of container trucks on the roads around Port Botany and making the freight task more efficient.

Cooks River Intermodal Terminal is connected to Port Botany by a dedicated freight rail line that transports containers to and from the Port and receives cargo via regional trains. Trucking operators use the terminal to deliver empty containers and collect full containers, optimising truck fleets and minimising the number of trucks travelling to Port Botany.

We actively support intermodal and freight rail infrastructure in Sydney and the Illawarra at both the strategic and statutory levels, by encouraging development of our own facilities and those of other organisations.

Intermodal terminals and rail freight infrastructure should be recognised in state environmental planning policies, local environmental plans and development control plans and we advocate for appropriate zonings and development control measures to ensure the long-term operational efficiency of intermodal and freight rail infrastructure.

Efficient Road Transport

GOAL

To collaborate with stakeholders to improve the efficiency of road transport in and around the ports and intermodal facilities.

Road haulage is an important mode of transport in the supply chains of many goods. We support initiatives to improve the efficiency of road transport and reduce congestion, including:

- higher productivity vehicle combinations
- two-way loading of vehicles, particularly for containers
- spreading truck flows across the 24/7 period to minimise impacts during commuter peak periods
- measures such as truck marshalling areas, timeslot allocations and performance standards to reduce queuing and congestion in and around port facilities
- suitable road improvements to cater for freight haulage requirements.

Navigating the Future: NSW Ports' 30 Year Master Plan analyses road infrastructure capability in the vicinity of the ports and intermodal terminals and identifies required improvements.

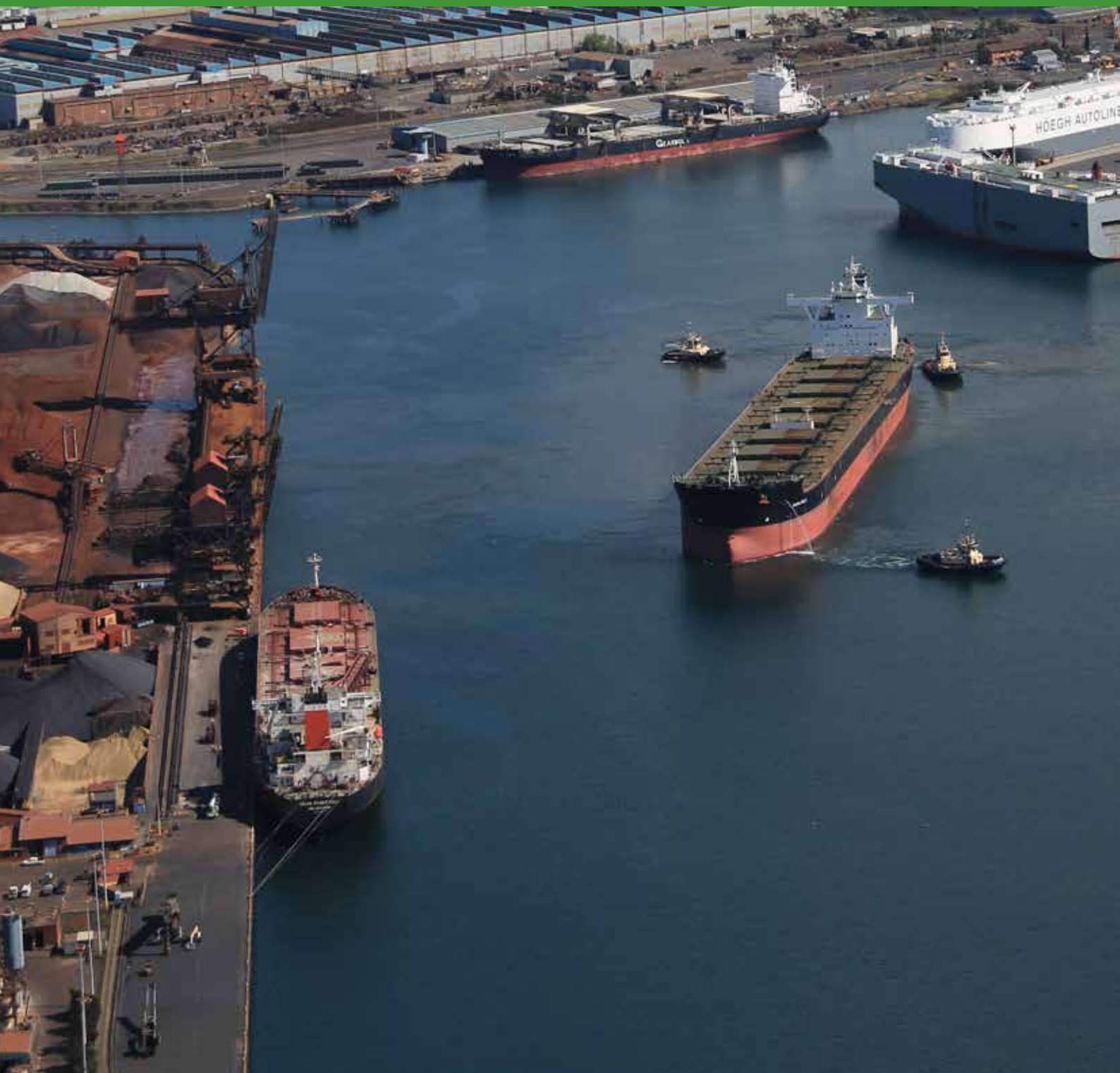
STRATEGIC DIRECTIONS

- Ensure that rail infrastructure at Port Botany is capable of being developed to handle three million TEUs over the next 30 years.
- Maximise the use of Cooks River and Enfield Intermodal Terminals for transporting containers to and from Port Botany by rail.
- Develop berths and terminal spaces as required to accommodate shipping and promote seaborne trade into and out of NSW.
- Ensure the ports are capable of accommodating larger vessel sizes for specific trades.
- Advocate for road network improvements and policy settings to promote efficient road transport.

SHORT TERM ACTIONS AND MILESTONES

ACTION/MILESTONE	TIMEFRAME
Commence intermodal terminal operations at Enfield ILC.	2015-2018
Liaise regularly with government agencies and industry participants to promote the development and use of rail, shipping, high productivity vehicles and related infrastructure.	Ongoing
Undertake maintenance dredging as necessary to restore navigable depths in channels and berthing boxes.	2015 initially and then ongoing

FOCUS AREA 2:
DEVELOPMENT AND LAND USE PLANNING



Planning for Future Infrastructure Requirements

GOAL

To identify and promote the development of infrastructure for expected long-term increases in trade volumes.

Long-term trade forecasts and trends in shipping and logistics for the ports and intermodal terminals inform our strategic planning for future infrastructure requirements. *Navigating the Future: NSW Ports' 30 Year Master Plan* charts the course towards a sustainable port supply chain to meet the needs of NSW over the next 30 years and beyond. We have engaged widely with stakeholders in relation to the Master Plan and will use it to guide our decision making and actions in relation to the provision of infrastructure to meet future demand.

Key strategic plans released by the NSW Government for freight and logistics include the *Long Term Transport Master Plan,* the *NSW Freight and Ports Strategy, A Plan for Growing Sydney* and the *Draft Illawarra Regional Growth and Infrastructure Plan.*

We have responded to these plans by consistently advocating for existing and future freight-related infrastructure and corridors to be identified and protected through appropriate planning controls. This promotes optimal use of infrastructure while minimising amenity impacts on sensitive uses.

We also encourage the approval of development applications that assist in sustainably growing the movement of freight by rail. We have provided submissions supporting the intermodal terminal at Moorebank, as it will play an important role in a sustainable supply chain. We also support future developments that will assist the freight task such as the Maldon-Dombarton Rail Link and potential intermodal terminals at Eastern Creek and/or Badgerys Creek.

Planning the Interface between Ports/ Intermodal Facilities and the Community

GOAL

To work with state and local governments to promote the compatible development of ports, intermodal facilities and surrounding communities.

It is a challenge for port and intermodal facilities to operate and cater for growth in an urbanised environment. Urban encroachment near the ports and intermodal terminals is a major concern due to the potential for impacts on local amenity and the efficiency of the logistics chain.

Where possible, residential areas and other sensitive uses should be separated from ports and intermodal terminals by appropriate buffer zones to minimise land use conflicts. A layered approach that incorporates general industrial and freight-related uses close to the hub, supported by light industry and open space areas towards the outer margins of the buffer, is ideal.

Strategic plans, environmental planning instruments and development control plans should ensure the compatibility of development and help to avoid land use conflict. We will advocate to state and local governments for appropriate planning measures in areas surrounding ports and intermodal terminals, including:

- establishing formal buffer/protection zones around the ports, intermodal terminals and freight road and rail corridors to ensure their long-term viability and identifying lands that will potentially be impacted by freight activities to restrict sensitive land uses on these lands
- retaining existing industrial land zonings around ports and intermodal terminals, and maintaining lot sizes and accessibility to protect the viability of industrial uses on these sites
- ensuring new uses on sites close to ports and intermodal terminals do not compromise current operations or future growth, and ensuring development proposals are referred to NSW Ports for comment
- preventing the encroachment of residential or mixed use development within areas likely to be impacted by ports, intermodals, related industries and freight corridors
- adding notifications to planning certificates for properties within a port/industrial impact zone
- requiring sensitive use developments in neighbouring areas to be designed to mitigate against amenity impacts

The closest residential premises to operational lands at the ports and intermodal terminals are located:
200 metres from Port Botany,
110 metres from Port Kembla,
60 metres from the Enfield ILC,
and 100 metres from the Cooks River Intermodal Terminal.

- encouraging an update of the Department of Planning and Environment's *Development Near Rail Corridors and Busy Roads – Interim Guideline* (2008) to include ports and intermodal terminals and make the Guideline's requirements mandatory.

Sustainable Port and Intermodal Terminal Development

GOAL

To promote sustainable design and operations at the ports and intermodal terminals.

Efficient, sustainable design and operating practices are critical for the future growth and development of the port and intermodal terminal facilities.

The *Port Botany Development Code, Enfield Development Guideline* and *Green Port Checklist* guide development within the ports and intermodals to incorporate sustainability objectives and outcomes. The Code and Guideline prescribe minimum standards for design and operation of new development to:

- achieve energy efficiency and consumption
- reduce and reuse of water resources
- better use materials and equipment
- minimise waste and waste handling and encourage recycling/reuse
- consider climate change risk and greenhouse gas contributions
- undertake landscaping
- consider heritage items
- address water and air quality
- manage noise and vibration impacts
- manage soil and water contamination.

The Checklist facilitates the implementation of environmentally sustainable measures as part of new development. It focuses on the longer-term measures that should be considered for implementation during the design and operational stages of a project or development. The Checklist is applied at a decision-making stage where options above and beyond accepted standard environmental practice for improving sustainability can be considered and included in a project.

The Checklist identifies eight environmental and sustainability aspects that concern most port and intermodal terminal operations and facilities:

1. Sustainable Environmental Management
2. Materials Selection
3. Waste Management
4. Water Use and Quality
5. Energy Use and Greenhouse Gas Emissions
6. Green Buildings and Indoor Environments
7. Outdoor Environment/Landscaping
8. Amenity (noise, light, odour).

The Checklist contributes to our environmental objective, as landlord, to encourage and support our tenants and port users to continually improve their environmental and sustainability performance.

Planning for and Adapting to Climate Change Requirements

GOAL

To assess the likely impacts of climate change on NSW Ports assets and adapt as necessary to ensure their long-term resilience.

It has been conservatively estimated that the annual costs of unmitigated climate change on Australia's infrastructure could reach about $9 billion in 2020 and $40 billion in 2050 (Garnaut, 2008). Climate change is likely to exacerbate the impacts of environmental exposure on infrastructure and supply chains; we must therefore assess potential risks and develop adaptation measures for future weather events and longer-term climate change.

The *Port Botany Development Code* includes objectives to minimise the risk of climate change impacts on new and existing port facilities, and to minimise greenhouse gas emissions from new port facilities. To achieve this, all new development at Port Botany is subject to a climate change risk assessment.

Port Botany and Port Kembla were selected as case studies in a National Climate Change Adaptation Research Facility report series *Enhancing the Resilience of Seaports to a Changing Climate*. As a part of this research, work packages focused on understanding future climate scenarios and implications, assessing the functional resilience of port environments, and modelling the structural resilience of core port infrastructure. A climate change adaptation guideline for ports was developed as a key outcome of the project.

The research produced several software tools including a GIS-enabled asset register for Port Kembla to map the vulnerability of assets, a container terminal simulator that compares operational performance under different climate-related events and a tool for modelling deterioration of structural elements.

A shareholder-commissioned risk assessment identified low to moderate risks to our infrastructure and operations associated with climate change. The assessment found that "the anticipated effect of climate change on NSW Ports should be manageable with current engineering and asset management practices combined with some adaptive practices" (GHD, 2015).

CASE STUDY

Automation of Patrick cargo handling facilities

The Patrick container terminal at Port Botany has been expanded and re-developed into a semi-automated facility. As a part of the automation process, new straddle carriers (AutoStrads) move and stack containers from the quay line into holding yards and onto vehicles, and back to quay cranes, without on-ground staff. The terminal redevelopment and automation will result in a number of environmental benefits.

Reduced operational noise: Noise is expected to reduce as the AutoStrads do not require reversing alarms. There will also be less noise associated with shifting gears and reduced idle time as the carriers automatically shut down when not in use. Reduced idling times also limit air emissions. Container positioning by the machines is accurate to two centimetres which may further reduce container impact noise.

Improved stormwater quality: Water quality improvement measures include an undercover maintenance building and workshop, a new bunded fuel storage area, enhanced stormwater infrastructure and upgrades to the dangerous goods containment area.

Reduced energy usage: All buildings have been designed to achieve a Green Star Rating of 4.0. Power factor correction has been applied to the electrical power systems to increase energy efficiency and reduce electricity costs. Energy efficient lighting has been installed. Since the AutoStrads do not need light to operate, lighting intensity is reduced and yard lighting will also have power factor correction.

Our current climate change adaptation strategies include:

- design criteria to accommodate projected sea level rise in new developments
- asset management processes such as routine inspections and maintenance, cathodic protection on some berths and breakwater replenishment
- trade diversification to ensure business viability in the event that a particular cargo type is affected as a result of climate change.

We will record and analyse trends around weather events that interrupt port and intermodal terminal operations on the seaside and landside to inform future adaptation strategies. This will involve liaison with external parties including the Port Authority of NSW and logistics operators.

In the longer term, we intend to review breakwaters and seawalls at Port Kembla to ensure their dimensions and structural integrity are sufficient to handle future sea level projections.

STRATEGIC DIRECTIONS

- Promote the adoption of planning schemes for appropriate and compatible land use around ports, intermodals and related infrastructure.
- Integrate sustainable design principles into our land use plans, development policies, tenancy agreements and port developments.
- Monitor the impacts of climate change and develop appropriate adaptation measures as required to ensure long-term resilience.

SHORT TERM ACTIONS AND MILESTONES

ACTION/MILESTONE	TIMEFRAME
Gain recognition of port protection requirements and buffer zones through environmental planning instruments and development control plans.	Ongoing
Contribute to government policies and strategic plans for freight and logistics transport infrastructure.	When released for comment
Review and improve the Green Port Checklist to continue to enhance the implementation of sustainable actions.	2017
Prepare a Port Kembla Development Code to complement similar guides for Port Botany and Enfield, including measures to consider climate change.	2017
Incorporate sustainable design measures in new development projects.	During design phases of developments
Establish a program to record weather-related disruptions to port operations to establish long-term trends.	2015

FOCUS AREA 3: LOCAL ENVIRONMENTAL OUTCOMES

GOAL

To maintain local environmental values and the amenity of communities as port and intermodal operations grow to service the NSW economy.

Addressing environmental impacts

Activities related to port and intermodal assets can impact the local environment and neighbouring communities. The impacts differ for each asset as they are influenced by the proximity of residential uses, level of existing disturbances and adjoining industrial land uses. Planning approval processes identify and assess environmental impacts of development and operations at the ports and intermodal terminals. Conditions of consent and construction and operational environmental management plans (EMPs) incorporate identified mitigation measures that can address the potential impacts.

NSW Ports has developed overarching EMPs for each of our assets to provide a consistent framework for the environmental management of activities across the sites and help us to meet our environmental obligations.

Our overarching EMPs:

- provide a framework for all other EMPs and sub-plans that apply to each site
- recognise applicable environmental obligations
- identify environmental aspects and impacts, and assess environmental risks
- document the process to identify measures to control and/or mitigate environmental impacts and risks
- identify parties responsible for management of environmental impacts and risks
- outline the management processes that:
  - ensure the implementation of control/ mitigation measures
  - track environmental compliance and performance.

In addition, the overarching EMPs provide standard mitigation measures that can address the impacts of port development and operations and include procedures to address aspects such as complaints handling, incident reporting, non-conformance and corrective actions.

Port and intermodal tenants and users are directly responsible for their own environmental performance. As a responsible landlord, we use reasonable endeavours to ensure tenants and users comply with all environmental laws and all relevant EMPs. All future tenant EMPs, for both construction and operations, will be consistent with our overarching EMPs.

Managing key aspects

Navigating the Future: NSW Ports' 30 Year Master Plan details expected growth in trade volumes, productivity and infrastructure requirements for our assets. This information will allow us to consider the potential impacts of future activities and develop appropriate environmental protection strategies. Key aspects to be considered include noise, traffic, storage and handling of hazardous substances, dredging and air quality. As trade grows we will continue to conserve ecological and heritage values at our sites for future generations.

Reducing noise pollution

Noise impacts are a concern for residents living around Port Botany. Actions to address these impacts include:

- reporting noise complaints directly to tenants where a specific noise source has been identified
- communicating the overall issue of noise by reporting noise complaint summaries to our Community Consultative Committees
- encouraging port tenants to change over tonal reversing beepers to quieter quacker-style technology and, where feasible, reduce or eliminate other on-site alarms
- maintaining a thorough complaints register that maps noise complainant locations and using this to advocate for changes to land use assessment and buffer zones
- cooperating with the NSW Environment Protection Authority (EPA) to manage complaints, and periodically monitor noise levels.

We participate in an inter-agency noise working group at Port Botany that includes City of Botany Bay, Randwick City and NSW Government representatives to collaborate on noise management over the entire port and industrial area precinct. The working group shall inform and advise authorities regarding noise affected areas and appropriate land use planning for the locality.

We will work with new and existing tenants to review noise sources on their sites and investigate feasible alternatives. All mobile plant and equipment in the new Sydney International Container Terminal (SICTL) on the Port Botany expansion is fitted with non-tonal reversing and movement alarms. Low noise emissions was one of SICTL's criteria for selecting operational plant such as reach stackers and shuttle carriers. The new plant are fitted with broadband quacker-type reversing alarms as opposed to tonal beepers. Broadband reversing alarms are equally effective but minimise noise impacts on nearby residents. As part of the development, SICTL constructed noise walls along the northern boundary and rail line to further reduce noise impacts.

Similarly, a number of noise walls were constructed at the Enfield ILC in advance of operations commencing to protect the local community from future noise impacts.

We will develop a noise strategy for Port Botany to document existing noise management measures and identify further actions to address the issue, such as long-term noise monitoring.

Mitigating Traffic Impacts

Heavy vehicle traffic associated with port and intermodal terminal operations can be a significant issue for local residents and motorists. Traffic impacts are assessed for significant port developments to identify any road safety and congestion issues and determine appropriate solutions.

As new operations commence, tenants must prepare and implement traffic management plans to promote traffic safety and minimise noise and congestion. Traffic management plans include measures such as designated heavy vehicle routes, truck marshalling and queuing areas, driver training and signage. At Port Botany, stevedores and road transport providers must meet mandatory access and performance standards to minimise truck queuing and associated congestion.

We will continue to monitor traffic movements at Port Botany and Port Kembla to track the performance of roads and intersections in the vicinity of the ports as trade increases.

Safe Handling of Hazardous Substances

The storage and transport of hazardous substances at ports and intermodal terminals is managed in accordance with Australian Standards and regulatory requirements. We are responsible for upholding these standards at bulk liquid berths.

We are planning for long-term increases in the handling of bulk liquids and containerised dangerous goods, particularly at Port Botany. We will undertake a strategic assessment of hazards and risks associated with trade growth to guide the safe development of the port for the benefit of workers and neighbouring communities.

Conserving Heritage

We maintain a register of heritage items that comprise a mixture of local and state significant items including:

- Bunnerong Canal Rail Bridge, Port Botany
- Bunnerong Power Station Canal, Port Botany
- Revetment Wall, Port Botany
- Mobile Block Setting Steam Crane, Port Kembla

- Historical Military Museum, Port Kembla
- Concrete Tank Barriers, Port Kembla
- Breakwater Battery, Port Kembla
- Cooks River Container Terminal
- Lay Down Points Lever, Cooks River Intermodal Terminal
- Electric Overhead Travelling Crane, Cooks River Intermodal Terminal
- MCS HRT Administration Building, Cooks River Intermodal Terminal
- Pillar Water Tank, Enfield ILC
- Tarpaulin Factory, Enfield ILC.

We review the heritage items annually to assess their condition and inform future management and maintenance requirements. In the 2015-16 financial year, NSW Ports will undertake restorative actions to several items to prevent deterioration of these heritage structures. A heritage management strategy will ensure the ongoing conservation of their heritage values.

Reducing Air Emissions

Ports and intermodal terminals are focal points for many modes of transport and mobile equipment powered by internal combustion engines that emit air pollutants. The non-road sector (including ships, rail locomotives, and mobile plant and equipment) is the fourth largest human-made source of fine particulate emissions in the Greater Metropolitan Region (EPA, 2012). As trade grows, we will work with regulators, tenants and port users to improve emissions performance.

Air emissions from the shipping industry are regulated under the *International Convention for the Prevention of Pollution from Ships* (MARPOL) established by the International Maritime Organisation (IMO). Ship performance is expected to improve considerably as new regulations made under Annex VI of MARPOL take effect. The maximum sulphur content of fuel used by shipping will reduce from 3.5 per cent to 0.5 per cent from 1 January 2020, subject to a feasibility review to be completed by IMO no later than 2018. Fuel quality improvements will lead to significant reductions in sulphur dioxide and particulate matter emissions from ships.

Marine diesel engine standards for the control of nitrogen oxide (NO_X) emissions have improved, with ships constructed since 2011 required to meet IMO "Tier II" emission limits resulting in a 20 per cent reduction in NO_X emissions compared to the previous "Tier I" standard. NO_X is a precursor for the formation of photochemical smog in the atmosphere.

Shoreside power supply in select ports addresses specific air quality issues from ships at berth. Shoreside power allows vessels to plug in to mains power instead of using their engines at berth. There is no international standard for power connections to vessels; converting vessels to accept shoreside power is expensive and shoreside power infrastructure is also costly and operationally inefficient. Shoreside power usage is only feasible where the same vessel makes regular calls to the port, which is not the norm for vessels calling at Port Botany and Port Kembla.

The use of shoreside power can result in higher CO_2 emissions than vessel engines operating at berth if the energy source being used to generate the mains power is a high CO_2 emissions source such as coal fired power plants.

Some ships operating in Northern European and United States waters have adopted liquefied natural gas (LNG) as an alternative fuel. An LNG-powered roll-on, roll-off vessel is being built to operate on the Melbourne-Devonport route in Australia. Combustion of LNG results in significantly lower emissions of sulphur, NO_X and particulate matter than heavy fuel oil or distillate fuels. In the medium term, LNG is likely to suit vessels that operate regularly in areas where the fuel is readily available and low-emissions performance is a priority. In the longer term, LNG may provide a stepping-stone for the international shipping fleet towards a more sustainable energy source.

Emission standards for on-road diesel heavy duty vehicles have improved progressively in recent years, with benchmarks for NO_X and particulate matter emissions from vehicles manufactured since 2011 (ADR 80/03, 2013) reducing by 75 per cent and 94 per cent respectively compared to the standards that applied in 1995-96 (ADR 70/00, 1999).

Australia does not have mandatory emission standards for rail locomotives and non-road mobile equipment. According to its *Diesel and Marine Emissions Management Strategy* (2015) the EPA will consider applying emission standards to the rail and non-road equipment sectors through new licence conditions in coming years.

We will actively advocate for policy settings that deliver effective and achievable air emissions improvements, keep tenants and port users informed in relation to air emissions policy initiatives and encourage early adoption of measures such as procuring less polluting equipment, retrofitting and upgrading existing engines and regularly servicing and maintaining equipment to optimise performance.

CASE STUDY

Cement Australia Clinker receival system and grinding mill

In 2014, Cement Australia commissioned its Port Kembla Grinding Mill, the largest single cement-grinding mill in Australia.

In an excellent example of industrial ecology, the mill utilises the available supply of granulated blast furnace slag, an inert by-product of the Port Kembla steelworks, to produce a sustainable cement additive. The inclusion of ground slag in cement products reduces its overall carbon footprint and conserves natural resources such as limestone and coal.

The facility also utilises energy-efficient grinding technology; covered conveyors, enclosed sheds and silos for the handling and storage of raw materials and products; best practice dust extraction and filtration technologies; and a modern truck fleet to minimise noise and air emissions.

Green and Golden Bell Frogs are known to be highly mobile, capable of moving long distances in a single day/night of up to 1-1.5 kilometres, and observations suggest movements of up to five kilometres may be common, and the frog may possibly disperse as far as 10 kilometres.

(White & Pyke, 2008)

Conserving Ecological Values

While most of the land we manage is highly modified and of little ecological value, we support efforts to conserve remnant communities and enhance habitats of ecologically significant flora and fauna.

At Port Botany, we fund the Penrhyn Estuary Rehabilitation program that has established and maintained saltmarsh, shorebird feeding habitat and seagrasses. Consultants engaged by the Port Authority of NSW measure and report on water quality within the estuary, migratory shorebird numbers, seagrass colonisation, benthic invertebrate concentrations in the estuary substrate and the area and quality of the saltmarsh habitat.

We are one of several businesses and community organisations that work cooperatively to conserve local populations of the endangered Green and Golden Bell Frog (*Litoria aurea*) at Port Kembla and Enfield.

In 2013, through a grant from the Office of Environment and Heritage, we installed breeding ponds at two sites in the Outer Harbour in Port Kembla and established a frog movement corridor with suitable vegetation and protective fencing along the Gurungaty Waterway.

We also manage dedicated Green and Golden Bell Frog ponds, foraging habitat and a movement corridor on the Enfield ILC site. Ongoing maintenance and regular frog surveys ensure the quality of the frog habitat.

Our staff are formally trained in frog handling to increase awareness and utilise best practice management techniques when frogs are encountered.

We are also undertaking revegetation works along the Gurungaty Waterway at Port Kembla to establish a corridor of fringing coastal vegetation to support a mangrove colony that has established within the Waterway.

We have established an area for ecological restoration at the Enfield ILC that includes the frog habitat features described above and an adjacent artificial hill known as Mt Enfield that we are planting with local endemic species from the endangered Cumberland Plain Woodland community.

Protecting Water Quality

Recent monitoring programs indicate that water quality at Port Botany and Port Kembla generally meets criteria for the protection of aquatic ecosystems. Water quality may be impacted by disturbances such as catchment run-off and resuspension of sediments due to wind and wave action, vessel movements and port development activities, including dredging and reclamation.

Developments on NSW Ports' sites include stormwater management and treatment facilities to intercept pollutants and protect receiving water quality. Groundwater quality is protected through appropriately designed site infrastructure and leak detection procedures to reduce the chance of pollutant infiltration.

Groundwater monitoring of specific sites, such as bulk liquid facilities, is conducted in accordance with EPA licence requirements.

If capital or maintenance dredging works are required, we manage water quality impacts by assessing sediment quality, using appropriate dredging plant and techniques, and selecting suitable spoil locations. Where appropriate we also deploy silt curtains, install containment structures for the emplacement of dredge spoil and monitor water quality. In anticipation of future trade growth, we will determine future dredging requirements and assess options for dredging and spoil disposal to protect water quality and minimise waste.

Continuous improvement

We will regularly review and update our EMPs to improve environmental performance and address emerging issues. We will work with stakeholders to address aspects such as:

- use and control of fumigants for biosecurity purposes
- dust control in bulk materials handling and storage
- marine conservation in proximity to ports
- biosecurity control.

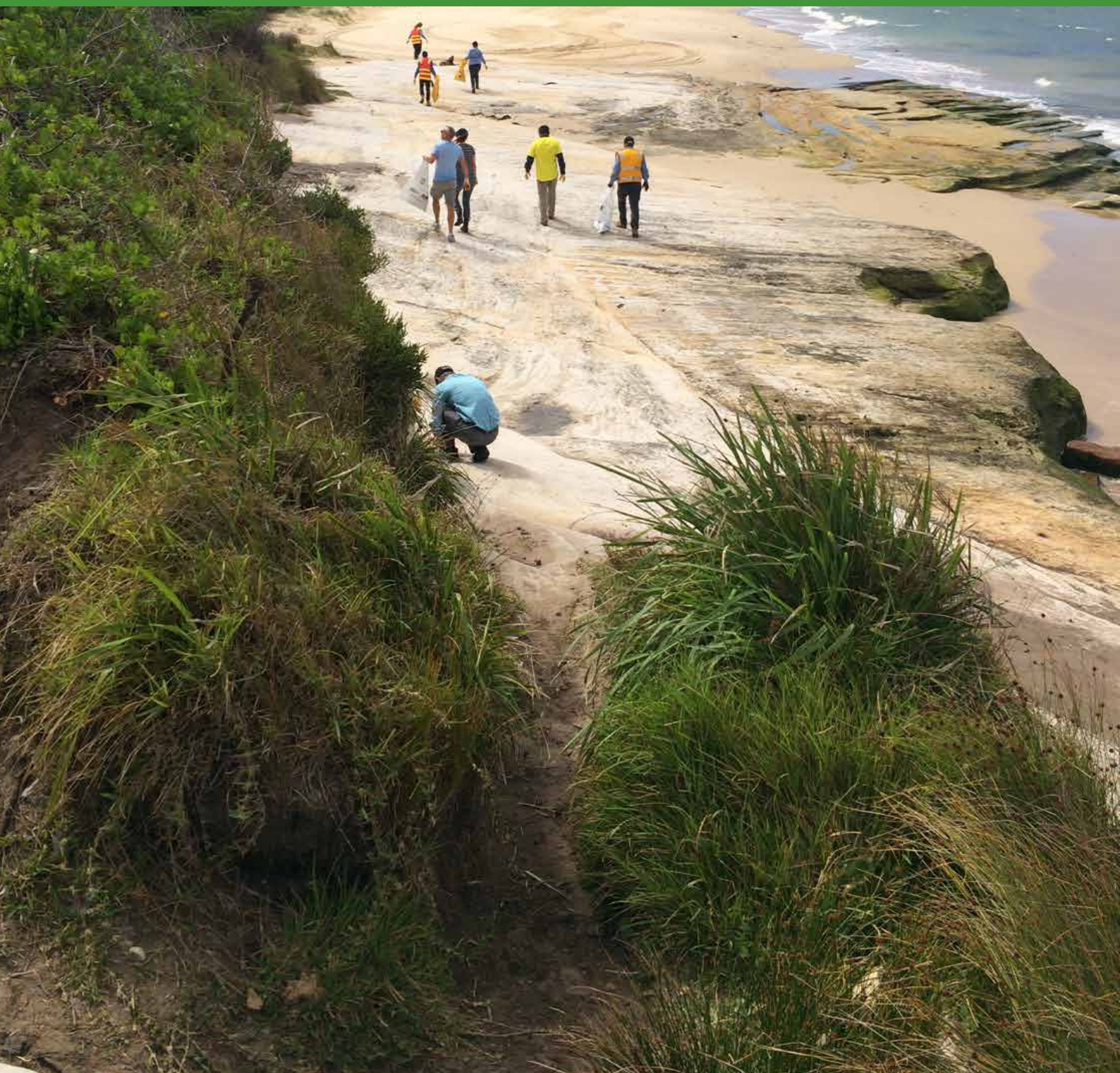
STRATEGIC DIRECTIONS

- Progressively develop management strategies for key environmental aspects that address the long-term impacts of trade growth.
- Conserve ecological and cultural heritage values for the benefit of future generations.
- Proactively engage with stakeholders to identify and address emerging environmental issues.

SHORT TERM ACTIONS AND MILESTONES

ACTION/MILESTONE	TIMEFRAME
Develop and implement a noise management strategy for Port Botany.	2017
Monitor road traffic volumes at Port Botany and Port Kembla.	2016-2018
Assess long-term land use hazard and risk for Port Botany.	2017
Contribute to public discussion and government policy regarding the environmental management of port operations.	Ongoing
Develop and implement a heritage management strategy.	2016
Implement and continually improve EMPs across port and intermodal facilities.	2015 ongoing
Maintain the Green and Golden Bell Frog ponds at Enfield and Port Kembla.	Ongoing

FOCUS AREA 4: RESOURCE CONSERVATION AND EFFICIENCY



GOAL

To minimise resource consumption and waste through the better use of land, infrastructure, renewable energy and recycled materials.

Optimising land and infrastructure

Ports and intermodal terminals are major infrastructure assets that provide hubs for stevedoring, freight and logistics activity. We allocate port land to tenants and operators to maximise utilisation and productivity. We emphasise the best use of existing land and infrastructure (e.g. berths, roads, rail) before constructing new facilities and encourage tenants to adapt their operations and facilities in response to changing market trends to increase trade efficiencies and throughput of existing infrastructure.

The use of land and infrastructure is optimised by:

- using dynamic under-keel clearance systems and tidal windows to increase the payload of deep draft vessels without dredging
- removing bottlenecks in bulk liquid discharging systems, and upgrading pumping systems to increase efficiency of existing berth facilities
- reusing and adapting existing terminal infrastructure at lease termination such as buildings, pavements, pipelines and bulk liquid storage tanks
- creating multi-user and multi-purpose facilities rather than single-user or single-purpose facilities, such as small craft berthing facilities
- investing in technologies to extend the life of infrastructure, such as cathodic protection systems for steel and concrete wharf infrastructure instead of demolition and new construction.

CASE STUDIES

Adapting bulk storage facilities

In response to changing market circumstances, Port Kembla Gateway has adapted the use of its No. 5 Storage Shed to receive fertiliser imports. Port Kembla is ideally situated to service agricultural areas in southern NSW which minimises the distance travelled over land. In many cases, the fertiliser is carried as a backload by trucks that have delivered grain or other freight to the port, reducing the total number of truck movements.

Approximately 30,000 tonnes per annum of bulk fertiliser is received at the facility in pelletised form which minimises the potential for dust and spillage. The cargo is stored within a fully enclosed shed to protect it from the weather and prevent nutrient run-off. Trucks are loaded within the controlled environs of the shed and cleaned prior to departure. An online system and electronic weighbridge remotely authorises and tracks the out-loading of product from the shed.

NSW Ports IT system upgrade

Our 2014 upgrade of IT systems replaced around 85 computers at the Port Botany and Port Kembla offices. The new, larger screens are the latest generation hardware with better energy consumption and efficiency, mercury-free display backlights, a low halogen design and arsenic-free display glass. The desktops, laptops and tablets also use the latest Intel processors, chipsets and solid state drives (SSD) which are all more energy efficient than the old PCs which used common spindle drives.

CASE STUDY

Re-use and recycling of demolition materials from No. 3 Jetty, Port Kembla

The No. 3 Jetty at Port Kembla was built in 1940 and operated as a general cargo facility for over 40 years before acting as a tug fleet base until 2012. No longer suited to the requirements of modern port operations, the structure was demolished in 2014.

The demolition contractor dismantled and retrieved the components of the jetty and was able to successfully recycle or re-use 99 per cent of all materials recovered (refer to Table 2).

Table 2: Breakdown of Materials Recovered from Demolition of No. 3 Jetty, Port Kembla

High grade timber recycled for architectural use	391t
Lower grade timber recycled as wood chips and soil	1810t
Lower grade timber recycled as firewood	424t
Timber logs to be milled for architectural use	6000t
Concrete to be crushed and recycled as road base	1289t
Scrap metal for recycling	33t
Waste for landfill	10t
TOTAL	**9957t**

Prior to demolition, we made a comprehensive archival recording of the structure, including the collection of oral testimonies from personnel involved in the construction, operation and maintenance of the jetty. These records were archived with the State Library, the Office of Environment and Heritage and the City of Wollongong Local Studies Library.

Reuse and Recycling

In 2010-11 Australia generated 53.0 million tonnes of waste, of which 58 per cent was recovered and the remainder, some 22.2 million tonnes, was disposed to landfill (ABS, 2003).

We apply the principles of reduce, reuse and recycle to all resources within port and intermodal terminal areas. We support sustainable materials management, a systemic approach to using and reusing materials more productively over their entire lifecycles to prevent waste and reduce demand on natural resources.

We established comprehensive recycling services in 2014 for the Port Botany and Enfield ILC offices, reducing the amount of office waste sent to landfill. Recycling is also in place at our Port Kembla office.

Our electronic records management system reduces paper consumption. Our printers and copiers use high recycled content paper with double-sided printing as the default setting. We recycle toner cartridges and collect waste toner for reprocessing.

We will introduce protocols to recycle batteries, mobile phones and other electronic equipment in 2015.

We also support larger projects to reuse and recycle materials from development activities. In 2015, bulk liquid tenant Qenos at Port Botany demolished two large concrete tanks that stored propane and butane. A waste management plan ensured all construction waste was recorded, recycled where possible and disposed of correctly if not recyclable. More than 6,400 tonnes of concrete and more than 1,800 tonnes of steel was recycled. This represented more than 99 per cent of the total construction waste material (by weight) generated as a result of the demolition project.

As a part of works on Berth 103 at Port Kembla, 120,000m^3 of dredged material will be collected and deposited within the footprint of the approved Port Kembla Outer Harbour Development. This overcomes the cost and environmental impacts of disposal on land or out to sea, ensuring a beneficial use of an otherwise waste material and reducing the volume of imported fill material required to construct the Outer Harbour reclamation.

Energy and water consumption

Table 1 shows the approximate electricity and water consumption for the 2013-14 financial year for the areas operated by NSW Ports within each site.

This was the first year we calculated our electricity and water consumption. We will continue to monitor consumption to analyse trends and pursue opportunities for electricity and water savings.

We contracted COzero at the end of 2014 to install a sophisticated energy metering system and provide ongoing monitoring and assessment of energy usage at NSW Ports-operated areas at Port Botany. Sub-meters were installed to accurately analyse energy consumption and COzero's online platform monitors and controls energy usage in real time.

The system allows our Asset Maintenance staff to measure and control electricity usage, optimise plant performance and identify and react to abnormalities in energy use. Optimising plant operation will ensure our buildings run efficiently without compromising operations, reducing consumption and costs. We plan to install a similar system at Port Kembla in 2015-16.

We will compile an inventory of fuel consumption for our vehicle fleet in 2015-16 and explore opportunities to reduce fuel consumption and emissions through appropriate procurement policies, including vehicle performance rating systems such as the Green Vehicle Guide.

Table 1: NSW Ports electricity and water consumption, 2013-14

SITE	ELECTRICITY USE (KWH)	CO_2 EMISSIONS (T)	WATER USE (KL)
Port Botany	1,550,917	1407	19,955
Port Kembla	1,020,026	925	5313
Enfield ILC	149,368	158	7,834

The commercial and industrial sector generates around one-third of Australia's total waste stream. The National Waste Report 2010 showed that 44 per cent of the commercial and industrial waste generated in 2006-07, some 6.5 million tonnes, was disposed to landfill.

(Hyder, 2012)

STRATEGIC DIRECTIONS

- Prioritise the allocation of land in port areas for uses that require direct wharf access.
- Use adaptive strategies for existing infrastructure such as new technologies, re-use, retrofitting, augmentation and extension.
- Reduce the intensity of energy and water use at our assets.
- Continue the transition to energy-efficient lighting, plant and equipment.
- Investigate options for renewable energy sources and supply.
- Develop policies and processes to encourage the use of sustainably sourced goods and services and implement the principles of waste avoidance and resource recovery.
- Incorporate dredge spoils and sustainably sourced materials in future reclamation areas.

SHORT TERM ACTIONS AND MILESTONES

ACTION/MILESTONE	TIMEFRAME
Implement online electricity monitoring and management services to Port Kembla, as occurs at Port Botany	2016
Install additional photovoltaic solar electricity generation on administration buildings at Port Botany and Port Kembla.	2016
Review fuel consumption and introduce green procurement standards for motor vehicles.	2016
Implement recycling schemes for batteries, mobile phones and other electronic equipment	2015
Emplace Berth 103 dredged material within the footprint of the Port Kembla Outer Harbour Development.	2015

FOCUS AREA 5: STAKEHOLDER CONSULTATION AND RELATIONS

GOAL

To proactively and openly engage with stakeholders to ensure a coordinated and transparent approach to sustainability.

Industry Consultation

We are actively involved in a range of industry forums and stakeholder groups that work collaboratively to share information and address broader port and freight issues. We chair a port users group in Port Botany, the Cargo Facilitation Committee, that includes representatives from all container-related tenants and stakeholders from NSW and the Commonwealth Governments, carriers and industry associations. We are a member of the Bulk Liquids Association of NSW, which covers bulk liquid tenants in Port Botany and Port Kembla, and of both Ports' Security Groups.

In Port Kembla, we are secretariat to the Port Users Executive and Port User Council, which has a similar membership to the Port Botany user groups.

We are a member of PIANC (Permanent International Association of Navigation Congresses), a global organisation that guides sustainable waterborne transport infrastructure for ports and waterways. The PIANC international working groups develop technical updates on global issues to share best practice. We support active staff involvement in PIANC, and our Executive General Manager, Strategy and Planning Infrastructure is the Australian representative on the Environment Commission (EnviCom) of PIANC. EnviCom deals with, and produces resources on, sustainability and environmental risk-related issues for all PIANC areas, partners and activities.

We attend biannual meetings of the Ports Australia Environment and Planning Working Group that brings together environment and planning staff from ports around the country to share ideas and information on topics that affect the wider port industry.

We also attend the NSW Marine Pest Working Group organised by NSW Primary Industries. This forum discusses and develops state guidelines, monitoring requirements and communications material for marine pest incursions from ballast water releases and biofouling (i.e. marine growth on ship hulls).

In consultation with tenants we will establish Environment and Sustainability Working Groups at Port Botany and Port Kembla. The working groups will identify strategic opportunities to improve environmental performance and foster a collaborative approach towards sustainability initiatives.

Community Consultation

We engage and consult with local communities surrounding the ports regarding port operations, developments and appropriate environmental management measures. Five regular forums discuss environmental issues at the ports and Enfield ILC:

- Port Botany Community Consultative Committee: consists of representatives of the local community, local government, EPA and Port Botany tenants.
- Port Kembla Harbour Environment Group: consists of local community representatives, port users, EPA, local government and universities.
- Port Kembla Pollution Meeting: a public meeting convened and attended by local residents with input from EPA.
- Enfield Community Liaison Committee: consists of local community representatives, local government and tenants to discuss construction activities and environmental matters as part of the Enfield ILC development.
- Enfield Road Transport Coordination Group: consists of local government, the Department of Planning and Environment and Roads and Maritime Services.

Community awareness and support is important to the long-term operation of the ports and intermodal terminals. We will continue to communicate with the community through these forums to share information regarding port activities.

We are also committed to consultation on specific port and intermodal projects or activities. We consulted with the community on the proposed plans for the southern precinct, including the Tarpaulin Factory, at the Enfield ILC through advertising and letterbox drops to nearby residences. Consultation material was available on our website or in hard copy and community submissions informed the development of the community access paths to the southern precinct and helped us identify acceptable uses for the Tarpaulin Factory building. Feedback on the consultation process itself will also inform future consultation programs.

We accept community enquiries and complaints through:

- **Website enquiry:** www.nswports.com.au
- **Email:** enquiries@nswports.com.au
- **Phone:** 1300 922 524

Enquiries and complaints are referred to the relevant staff for an appropriate response. If the matters raised relate to the activity of a tenant or port user it may be referred to the relevant organisation for response.

Involving our staff

A program of staff environmental awareness training will ensure uptake and application of the environmental procedures and requirements of the overarching EMPs for each site. The training will be tailored to the various positions within the company, based on the level of exposure a staff member has to environmental aspects. All staff will be aware of our environmental objectives and the training will help us to meet our obligations.

Table 3: NSW Ports Sustainability Events

EVENT	STAFF INVOLVED	EVENT DESCRIPTION AND OUTCOMES
Walk to Work Day 2013	13 NSW Ports staff	A lunchtime walk from Port Botany to a local park to encourage healthy habits and promote walking over car use
International Volunteers Week 2013	Five NSW Ports staff	Vegetation restoration activities with Randwick City Council's Bushcare Group and City of Botany Bay's landscape department
Earth Hour 2014	NSW Ports	Port Botany staff received a beeswax candle and reminders ensured computers and other equipment were shut off. Lights in all non-operational, non-security areas were turned off.
National Tree Day 2014	21 NSW Ports staff Four port tenant representatives from SICTL	A tree, shrub and native grass planting exercise at four different locations at Port Botany, Port Kembla and Enfield ILC.
Clean Up Australia Day 2014	12 NSW Ports staff and eight port tenant representatives from Patricks	Staff and tenants helped to clean up a public area adjacent to the port at Port Botany.
Clean Up Australia Day 2015	25 NSW Ports Botany staff, 19 port tenant representatives from Patricks, SICTL, Vopak, Origin Energy, BlueScope Steel and Port Kembla Gateway and a community representative	A clean up to public areas adjacent to Port Botany and Port Kembla and the intermodal terminal area at Enfield

As we progress with the implementation of EMPs, relevant staff will be encouraged to participate in the drafting of environmental procedures to ensure that they are appropriate to the task and foster greater commitment to achieving environmental performance goals.

Staff also participate in environmental and social action related events as summarised in Table 3.

Engaging a social enterprise at Port Kembla

Illawarra Vocational Services (IVS) is a customer-focused social enterprise that provides a range of services to businesses in the Illawarra, while offering paid employment opportunities to people with disabilities. We engaged IVS to provide regular landscaping and garden maintenance services at the Port Kembla Maritime Centre. The partnership gives IVS employees the opportunity to develop skills, earn an income and participate in community life, while we receive a reliable and well-managed service.

STRATEGIC DIRECTIONS

- Increase stakeholder awareness of the importance and sustainability of shipping, ports and logistics.
- Raise public confidence in the environmental management of NSW Ports sites.
- Participate in industry associations and alliances to promote ongoing learning and shared experiences.
- Foster whole-of-port action towards sustainability among staff, contractors and tenants.
- Demonstrate the values of integrity and accountability in all interactions with stakeholders.

SHORT TERM ACTIONS AND MILESTONES

ACTION/MILESTONE	TIMEFRAME
Continue to host regular community liaison group meetings at Port Botany, Port Kembla and Enfield	Ongoing
Improve the layout and presentation of development and sustainability information on our website	2015
Establish Environment and Sustainability Working Groups for tenants at Port Botany and Port Kembla	2016
Roll out of staff environmental awareness training for all staff and contractors	2015-2016
Continue to run and investigate opportunities for staff involvement in environmental and sustainability events	Ongoing

IMPLEMENTING THE SUSTAINABILITY PLAN

Integration with business plans

Our five-year Business Plan is updated annually. The actions identified in the Sustainability Plan will be incorporated into the Business Plan with action items given an appropriate budget allocation, if required, and responsibility assigned to a relevant manager for completion of the task within a given timeframe.

We will communicate the Sustainability Plan to stakeholders and engage with parties who can assist in its implementation.

Reporting on progress

In addition to routine internal reporting against our Business Plan, we will report on progress towards the implementation of the Sustainability Plan as follows:

- Annual internal report: A report to the Board summarising progress against each action item will be submitted in July each year.
- External report: At the completion of the three-year implementation period for short-term actions a summary report will indicate the status of each item and summarise the key achievements of that period. This may form part of the next update of the Plan.

Reviewing and updating the Plan

We will review and update the Sustainability Plan at least every three years, typically coinciding with the external report. Each review will:

- consider information and feedback received from stakeholders and other relevant sources
- consider whether the current sustainability goals are appropriate or should be amended
- adjust the strategic directions to address current issues and opportunities and align with the goals
- identify new short-term actions and milestones to occur within the next three years.

Each Sustainability Plan will be published on the NSW Ports website.

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APPENDIX A – SUMMARY OF ACTIONS

ACTION/MILESTONE	TIMEFRAME
Transport and Logistics	
Commence intermodal terminal operations at Enfield ILC	2015-2018
Liaise regularly with government agencies and industry participants to promote the development and use of rail, shipping and related infrastructure	Ongoing
Undertake berth depth maintenance dredging and develop an on-going maintenance dredging program as required	2015 initially and then ongoing
Development and Land Use Planning	
Gain recognition of port protection requirements and buffer zones through environmental planning instruments and development control plans	Ongoing
Contribute to government policies and strategic plans for freight and logistics transport infrastructure	When released for comment
Review and improve the Green Port Checklist to continue to enhance the implementation of sustainable actions	2017
Prepare a Port Kembla Development Guideline to complement similar guides for Port Botany and Enfield, including measures that consider climate change	2017
Incorporate sustainable design measures in upcoming development projects	During design phases of developments
Establish a program to record weather-related disruptions to port operations to establish long-term trends	2015
Local Environment Outcomes	
Develop and implement a noise management strategy for Port Botany	2017
Monitor road traffic volumes at Port Botany and Port Kembla	2016-2018
Assess long-term land use hazard and risk for Port Botany	2017
Contribute to public discussion and government policy as it relates to the environmental management of port operations	Ongoing
Develop and implement a heritage management strategy	2016
Implement and continually improve EMPs across port and intermodal facilities	2015 ongoing
Maintain the Green and Golden Bell Frog ponds at Enfield and Port Kembla	Ongoing

ACTION/MILESTONE	TIMEFRAME
Resource Conservation and Efficiency	
Implement online electricity monitoring and management services to Port Kembla, as occurs at Port Botany	2016
Install additional photovoltaic solar electricity generation on administration buildings at Port Botany and Port Kembla	2016
Review fuel consumption and introduce green procurement standards for motor vehicles	2016
Implement recycling schemes for batteries, mobile phones and other electronic equipment	2015
Emplace Berth 103 dredged material within the footprint of the Port Kembla Outer Harbour Development	2015
Stakeholder Consultation and Relations	
Continue to host regular community liaison group meetings at Port Botany, Port Kembla and Enfield	Ongoing
Improve the layout and presentation of development and sustainability information on our website	2015
Establish Environment and Sustainability Working Groups for tenants at Port Botany and Port Kembla	2016
Roll out of staff environmental awareness training for all staff and contractors	2015-2016
Continue to run and investigate opportunities for staff involvement in environmental and sustainability events	Ongoing

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