Intermodal Logistics Centre at Enfield

Preferred Project Report

June 2006

SKM

SYDNEY PORTS
FIRST PORT, FUTURE PORT

Intermodal Logistics Centre at Enfield

PREFERRED PROJECT REPORT

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1. Introduction

1.1 Applicant

Sydney Ports Corporation (Sydney Ports) is the applicant for the proposed Intermodal Logistics Centre (ILC) at Enfield.

1.2 Background to the Project

Container trade at Port Botany has been growing at an average rate of about 7.4% per year and is forecast to grow by about 5% per year over the next 20 years, reaching over 3 million TEU[1] per year by 2025. Currently, trucks move over 75% of containers to and from Port Botany and, as the volume of containers grows, it will be necessary to increase the use of rail to moderate growth in truck traffic and assist in the efficient transfer of containers to and from the port.

To date, rail has been an under-utilised resource for transporting freight. Both the Federal and State Governments have recognised the economic, environmental and social advantages of using rail and are endeavouring to promote the increased usage of rail for transporting freight. This has been recently reinforced in the first stage of the NSW Government's Port Freight Plan which aims to increase the proportion of containers transported to and from Port Botany by rail to 40% by 2011.

The future development of intermodal facilities in the Sydney Metropolitan Area has been identified as being vital to improving the efficiency of land transport and supporting efficient port operations in Sydney. Intermodal terminals will facilitate greater use of rail transport and provide for the efficient distribution of containers to and from Port Botany, thus ensuring that Port Botany remains competitive and that trade, and therefore economic growth in NSW, is not inhibited.

One of the key elements of Sydney Ports' strategy to facilitate rail for transporting freight is the establishment, at the former Enfield Marshalling Yards, of an Intermodal Logistics Centre linked by dedicated freight rail access to Port Botany. This development will contribute to the existing and future network of intermodal facilities to enable Sydney to provide an efficient and reliable freight transport system in the future.

Sydney Ports considered the former Enfield Marshalling Yards as a suitable site for the construction of an intermodal terminal and, following the construction of the new marshalling yards, purchased the remaining site progressively between 2001 and 2003. The establishment of an Intermodal Terminal at this location was part of Sydney Ports' strategy for responding to the predicted growth in container trade at Port Botany.

An EIS for a 500,000 TEU intermodal terminal on the Sydney Ports' land was commenced in late 2001, with a Planning Focus Meeting held in September 2001 and Director-General's Requirements issued by the (then) Department of Urban Affairs and Planning (DUAP) in October 2001.

[1] One TEU is equivalent to one twenty-foot container. A forty-foot container is equivalent to two TEU.

Preparation of the EIS was suspended in March 2002 when it was announced that the proposed intermodal terminal would be subject to an independent review by the Hon Milton Morris AO. Conclusions and recommendations from this review were released in February 2003 and included the following:

- The proposed 500,000 TEU intermodal terminal was too large for the site; and
- The NSW Government should conduct a major reassessment of intermodal demand and potential sites. This work should see the development of intermodal sites across Sydney within the next decade as its primary consideration.

Since the outcomes of the independent Milton Morris (2003) review, the NSW Government has continued to reinforce the need to move more freight by rail. As a result, Sydney Ports has revised its Intermodal Terminal proposal. It now proposes a more integrated site development, consistent with the Port Freight Plan and the recently released Freight Infrastructure Advisory Board (FIAB) Report, based around a smaller intermodal terminal linked to on-site empty container storage facilities and port related warehousing, more commonly referred to as an Intermodal Logistics Centre (ILC).

1.3 Preferred Project Report

An Environmental Assessment (EA) report was prepared for the proposed ILC to meet the requirements of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation, 2000* (EP&A Regulation).

Pursuant to the EP&A Regulation, the EA was lodged with the Department of Planning (DoP) on 14 December 2005 (Application No 05_0147) and was placed on public exhibition by DoP on 9 January 2006.

Following exhibition of the EA, copies of all submissions were provided to Sydney Ports and relevant Government authorities. Sydney Ports has reviewed the submissions and this report (the Preferred Project Report) considers and responds to issues raised, including the need or otherwise to modify the proposal.

1.4 Assessment of Proposal

DoP will prepare an assessment report on the proposed ILC at Enfield which will take into account comments from the relevant Government authorities and the Preferred Project Report provided by Sydney Ports. The assessment report will be provided to the Minister for Planning, who will make a decision on approval and conditions in accordance with the EP&A Act.

On 15 February 2006 the Minister for Planning directed that an independent panel of experts be established into the proposed Intermodal Logistics Centre at Enfield. The Minister specified terms of reference for the Panel and directed the Panel to conduct meetings and make such other enquiries as are necessary in relation to the relevant aspects of the project stipulated in the Panel's terms of reference. A copy of the Preferred Project Report will be provided to the Panel for its consideration.

2. Project Description

2.1 Project as described in Environmental Assessment Report

The proposed Intermodal Logistics Centre at Enfield would be used for the transfer and storage of container freight to and from Port Botany, packing and unpacking of containers within the proposed warehouses and storage of empty containers for later re-use or for return to the Port. These elements were described in detail in Chapter 4 – Project Description of the EA (November 2005). In brief, the ILC at Enfield comprises:

- An Intermodal Terminal for the loading and unloading of containers between road and rail and short term storage of containers;
- Warehousing for the packing and unpacking of containers and short-term storage of cargo;
- Empty Container Storage Facilities for the storage of empty containers for later packing or transfer by rail;
- A Light Industrial and Commercial Area for light industrial and/or commercial use, preferably complementary to operations at the ILC. The area would also act as an interface to adjacent uses along Cosgrove Road;
- A Community and Ecological Area to provide the opportunity to incorporate ecological enhancement and community opportunities. The area would also serve as a buffer between operations on the site and residences to the south of the site; and
- Off site works comprising construction of a road bridge over the existing new Enfield Marshalling Yards for access to Wentworth Street, works on Cosgrove Road to manage access/egress of vehicles to/from the site, and rail connections to the freight rail network.

2.2 Modifications to the Proposal

Having reviewed submissions from the community, local government and State government agencies, and considered the proposal in the light of those submissions, Sydney Ports intends to construct and operate the proposed ILC, as outlined in Chapter 4 of the Environmental Assessment, with the following changes:

- The intersection at Norfolk Road /Roberts Road will be upgraded to RTA design requirements;
- Traffic control measures will be provided to manage articulated or B Double truck traffic leaving the ILC via the Cosgrove Road exit during am/pm peak periods;
- Extra noise barriers (a fence structure approx 350m long and 2m high, comprising double sided metal cladding) on top of the eastern noise mound will be provided along the Cosgrove Road alignment behind the Light Industrial / Commercial Area.

Reference has been made to the provision and operation of a public address system on the site. This system will now not be used at night (10pm to 6am).

3. Responses to Environmental Assessment Report

3.1 Submissions Received

The total number of submissions received and registered by the Department of Planning (DoP) was 329. These submissions were passed to Sydney Ports for its review and as input to the Preferred Project Report.

Submissions have been categorised by Sydney Ports as follows:

- Community (these are summarised in Appendix A)
  - Submissions from individuals or organisations 108 submissions
  - Form Letter Submissions
    - Submissions form letter 1 46 submissions
    - Submissions form letter 2 4 submissions
    - Submissions form letter 3 3 submissions
    - Submissions form letter 4 3 submissions
    - Submissions form letter 5 126 submissions
  - Petitions (4)
    - The Residents of Hankins Court, Chullora (12 signatures);
    - The Residents of Boronia Rd Greenacre (52 signatures);
    - The Proprietors of Strata Plan 14198 Barremma Rd Lakemba (11 signatures);
    - On behalf of the residents of Railway Rd and Unwins Bridge Rd, Sydenham (23 signatures).

- Councils (summarised in Appendix B)
  - Marrickville City Council;
  - Canterbury City Council;
  - Bankstown City Council – two submissions received;
  - Strathfield Council – two submissions received (the second was a separate Council submission to the FIAB report). There were also submissions from The Mayor and two Councillors. These are registered under individual submissions, not those of Council.

- NSW Government agencies/departments (summarised in Appendix C)
  - Department of Environment and Conservation
  - NSW Health
  - Ministry of Transport (2 submissions)
  - NSW Heritage Office

- RailCorp
- Department of Natural Resources
- Roads and Traffic Authority (3 letters).

- Industry (summarised in Appendix D)
  - CBFCA Australia
  - Shipping Australia Limited
  - CFCL Australia P/L
  - Weston Cereal Industries
  - MIST
  - State Chamber of Commerce
  - Walker Corporation
  - Infrastructure Partnerships Australia
  - NSW Road Transport Association Inc
  - Property Council of Australia.

3.2 Assessment of Submissions

Submissions were assessed as follows:

- Submissions were registered by DoP and passed to Sydney Ports;
- Details of each submission were entered into a data base;
- Issues were reviewed for the sufficiency of the EA information and whether additional information was needed for clarification;
- Each question or category of question was answered in the data base;
- Any new work required to answer the question was undertaken; and
- Responses were collated for input to this PPR.

3.3 Issues raised in Submissions

All submissions were reviewed and issues raised in each were placed in Issue Categories. The Issue Categories were derived during the consultation process and attempted to reflect the main areas of interest or concern to community members. It should be noted that inevitably there is some overlap of issues in different categories. Table 3-1 summarises the Issue Categories and the number of submissions that raise that Issue Category.

Table 3-1: Summary of Issues Raised

Issue Category Raised	Number of times raised	Details of Issues
Air Quality	48	Construction dust Effects of increased road traffic Locomotive emissions
Alternative uses of site	1	
Alternative sites	151	Locate ILC elsewhere
Amenity, quality of life	175	Noise Traffic Sleep disturbance
Approval processes	2	Rail access Road access to site
Consultation process	198	Lack of consultation No information for people of NESB Limited time for making submissions
Community and ecological area	6	Access Management
Contamination	9	Remediation Health risk Stockpiles and contaminated dust
Design	3	Site layout
Drainage	1	Flood mitigation
Economic benefit	5	Benefits to industry
EIS process	2	Comprehensiveness of EA
ESD	8	Sustainable development
Flora and Fauna	11	Green and Golden Bell Frog
Government policy	5	Supports Policy
Heritage and archaeology	5	Preservation and management of railway heritage items
Hydrology	6	Drainage, rehabilitate Coxs Creek
Industry opportunities	1	Suggestion for industrial use
Justification of Project	138	No need for intermodal Better located elsewhere
Land use	18	Surrounding land uses, especially residential
Management	7	Suggestions for operations, environmental management, monitoring
Noise	129	Construction noise including reversing alarms Operational noise, especially at night Road traffic noise Rail noise
Planning	4	Zoning Section 94 contributions
Pollution	82	Noise Air Quality Light spill

Property Impacts	147	Loss of land value
Rail Issues	66	Noise Air quality Increased freight movement
Reject Proposal	134	
Safety	25	Storage of hazardous goods Pedestrians Proximity of schools Access for emergency vehicles
Site operations	4	24 hour operation
Site qualities	11	Site access to rail freight line Proximity to residential areas
Socio-economic issues	157	General amenity Noise, Visual, Air, Public Health
Support Proposal	14	
Tarpaulin factory	5	Heritage values of objects on site Reuse opportunities
Traffic	224	Adequacy of modelling and traffic numbers Trucks in residential streets Congestion of road network Intersection performance Public transport Traffic noise Air quality on roads Road condition and maintenance
Vibration	52	Trains on freight line Trucks in the streets

3.4 Key issues

As noted in Table 3-1, the key issues raised by submissions were:

- Project justification (need for the project) and consideration of alternative locations for the proposal;
- Alternative uses for the site, including industrial opportunities and site qualities;
- Traffic issues, primarily intersection performance and network capacity. Other issues raised under traffic relate to the potential impacts from increased traffic, especially trucks and include noise, safety, air quality and general amenity. These are discussed in separate sections below;
- Noise derived from construction works and site operation (especially at night), as well as road traffic noise due to truck movements. Noise from rail movements is addressed in Rail Operational Issues;
- Air quality derived from construction works (dust) and increased truck movements in local streets. Air quality from rail movements is discussed in Rail Operations;
- Rail operational issues, relating to the performance of freight on the rail network between Port Botany and Enfield. Particular concerns were noise and air quality from the rail movements and the movement of rail throughout the night;
- Pollution. This related primarily to noise and air impacts from traffic. Light spill was identified as being of concern to many. Air and noise are addressed elsewhere, so this section will concentrate on light spill;
- Amenity and quality of life. This is generally related to problems of increased traffic through the streets and associated noise and safety. Sleep disturbance and light spill were also important considerations;
- Property impacts, primarily reduction in house values due to the proposed works;
- Land use, dealing with the proximity of residential land uses to the site;
- Consultation process, mainly relating to a lack of consultation throughout the project, the timing of the exhibition over the summer holidays and the limited time available for submissions to be provided in response to the EA;
- Approvals and EIS process;
- The community and ecological area;
- Flora and fauna and ESD;
- Site soil contamination;
- Site design and management;
- Drainage and Hydrology;
- Heritage and archaeology, including the use of the Tarpaulin Shed;
- Socio-economic issues. Issues associated with amenity were addressed separately. This section deals primarily with economic benefits and employment.

3.4.1 Project Justification (Need and Alternatives)

Issues Summary

Submissions concerned themselves with the role of an ILC at Enfield in the context of the proposed intermodal network (as outlined in the FIAB study) and the NSW Government's policy of putting 40% of Port Botany container freight on rail.

Submissions suggested that the proposed Enfield ILC is not in the centre of the market that it serves, and the reality is that the Enfield site is at the western end of the "neck of a funnel" 18 km long, the market referred to being predominantly to the west of the chosen site. It was suggested it would appear to be far more beneficial to locate an Intermodal Logistics Centre further west, to service the actual centre of the market, thereby utilising rail for a greater proportion of the overall transport task. It was suggested that the proposed site would merely transfer road network access from a point of congestion at Foreshore Road and General Holmes Drive to an alternatively congested part of the road network at Enfield.

In particular, Strathfield Council indicated the following: "Whilst it is understood and accepted that a significant increase in cross-metropolitan rail freight movement is necessary to cater for anticipated growth for the future, it is questionable if Enfield is the most suited location to achieve this. The Operation Terminal should be closer to the containers final destination by rail. Serious consideration should be given to a "Sydney Wide" Intermodal based at Ingleburn that is closer to the documented final destination of all freight. It also has heavy rail facilities and a number of motorway options. This in my opinion would prove to be more cost effective and would provide a quality logistic infrastructure, with long-term expansion for the Sydney Basin."

A number of submissions were concerned with the location of the ILC at the specific site in Enfield. It was argued that Enfield is unsuitable site/location for an intermodal logistics terminal to be built due to its close proximity to residential areas and to the compounding of already existing traffic congestion in the area. It was noted that current access to all freeways and motorways requires heavy vehicles passing residential areas. These include the M4, M5 and the recently opened M7. It was argued that a site location further to the west of Sydney would provide a more direct access to the motorways with minimum disruption.

Response

The need for the project and the choice of the existing site at Enfield were outlined in detail in Chapter 3 of the EA. This was outlined in the context of the need for a network of intermodal terminals servicing Sydney, as specified in the Milton Morris Report into the previous proposal at the site. Enfield is considered to support the development of this network, and is a suitable site for providing a distribution network for container imports and exports whose origin or destination is in the inner and middle western suburbs of Sydney. Chapter 3 of the EA identified that the inner and middle western area of Sydney (in which the proposed ILC is located) receives up to 56% of the incoming container traffic through Port Botany and is the origin for export of over 23% of container traffic destined for Port Botany. This

market comprises about 700,000 to 800,000 TEU per year. The development of the ILC will provide the opportunity for 300,000 TEU to be brought into and out of the area by rail (instead of by truck).

The need for the network of intermodal terminals has since been supported by the release of the Metropolitan Strategy and within it the Transport Strategy for Sydney. The strategy confirms the metropolitan freight strategy for import and export containers and reiterates the Government target of increasing rail's share of these containers movements to 40 percent by 2011. It acknowledges the need for significant upgrading of existing intermodal terminal infrastructure and new, larger scale road/rail intermodal terminals to provide sufficient capacity to allow the rail mode share target to be achieved. It identifies actions undertaken and proposed to achieve this. One such action was the release of the Freight Infrastructure Advisory Board (FIAB) final report - *Railing Port Botany's Containers*- which outlines a number of recommendations to help develop the planning for port freight movements in Sydney. As noted in the EA, the proposed ILC at Enfield is an important component in the FIAB report.

The development of the ILC will provide the opportunity for 300,000 TEU to be brought into and out of the area by rail (instead of by truck). It should be noted that every 50,000 TEU throughput processed through the ILC results in a saving of 41,000 truck movements between Port Botany and Enfield, and a saving of 16,000 truck movements from Port Botany to the final origin/destination within the ILC market area. That is, any reduction in throughput below 300,000 TEU will result in more trucks on the road within the ILC market area.

The site of the ILC at Enfield is the most appropriate site to service the inner and middle western Sydney catchment for the following reasons:

- The site is available and located within an existing operational industrial precinct with excellent access to two main arterial roads;
- The site and its surrounds have a history of and are currently used for road and rail purposes;
- The site is located at a suitable distance from the port, such that the ILC is a competitive alternative to the all truck delivery option between Port Botany and its final destination within the market area;
- The ILC site is located close to the geographical centre of the Sydney Basin (40km radius from Port Botany) where 85% of all containers from the Port are delivered;
- Sydney Ports Corporation has not found any other site that could service the inner and western Sydney market in a better location (serviced by dedicated freight rail and two main arterial roads), for less cost (given the heavy investment in infrastructure required for potential downstream intermodal locations), with a willing proponent and available for development to assist the NSW Government's objective of increasing the proportion of containers moved by rail to 40% by 2011.

As identified in the Metropolitan Strategy and the FIAB report a number of other intermodal terminals are proposed close to the market to reduce trucking distance to and from the terminal to distribution points. The FIAB also indicated that, not withstanding the industrial growth in the west and south west, there is a need for an intermodal facility in the 'central western" Sydney industrial area to meet local and sub-regional requirements, and that the proposed site at Enfield should be developed for that purpose. The ILC at Enfield will be one element in the NSW Government achieving 40% rail mode

share for transport of containers to and from Port Botany by 2011. These other intermodal areas will also need to be developed in the longer term, as identified in the Metropolitan Strategy.

Sites will be developed in the future in the western and south western areas of Sydney and will service the growing areas which will form their catchments. It would be inefficient to transport from Port Botany to those sites by rail (particularly with restricted rail windows outside of commuter peak hours) and then transport back to the inner and middle western catchment area by truck (backloading).

The ILC is located within an area surrounded by industrial development, and it is through these industrial areas that access will be provided between the proposed ILC and the arterial road network. The residential area south of the site and east of Cosgrove Road (opposite the proposed Community and Ecological Area) will not be subject to truck movements from the site.

Over time, and based on the experience of existing intermodals, the traffic impact of the fully operational ILC will decrease as truck fleet owners improve backloading trips between industrial areas, and continue to rationalise the number of trips required to the ILC in the pursuit of reducing fuel costs and improving efficiency. Moreover these benefits will expect to accrue more quickly once the network of intermodals is operational, and backloading is optimised across the Sydney Basin.

Existing and future heavy vehicles, not related to the ILC, will continue to affect residential areas on existing arterial roads, including Roberts Road and the Hume Highway. Motorways can all be accessed from the Enfield ILC via the designated arterial road network, which is the most appropriate route for heavy vehicle traffic. The impacts of trucks generated by the operation of the ILC are discussed in the traffic section below.

3.4.2 Traffic

Issues Summary

Traffic issues raised by the many community submissions were:

- Traffic generation from the site will add to the many traffic problems that already exist – further congestion on an already congested network;
- The traffic will have impacts in residential areas, causing safety, pollution and health effects;
- There will be further problems on specific roads, especially Roberts Road and Boronia Road. The ability of some roads such as Cosgrove Road to deal with increased truck traffic, especially B Doubles, was raised;
- Further congestion on major roads will lead to rat-running, especially for the smaller trucks which are difficult to control and will cause general motorists to divert through residential areas to avoid congested arterial roads; and
- Preferences for alternative access points to the site were raised.

A number of individual submissions addressed traffic issues in numerical terms, through provision of existing data or specific observations.

The Roads and Traffic Authority (RTA) provided 3 separate submissions in response to the EA. The second submission provided recommendations for the Statement of Commitments. The other two were concerned with:

- Traffic growth assumptions used in the EA studies, compared with those expected by the RTA and assumptions regarding back-loading;
- The capacity and operational performance of key intersections – Hume Highway and Cosgrove Road, Roberts Road and Norfolk Road, Roberts Road and Juno Parade and Punchbowl Road and Cosgrove Road;
- The benefits of a one way pair option of Cosgrove Road and Gould Street;
- Results of modelling using "SCATES" compared with the results provided in the EA;
- Local area traffic management issues and requirements;
- The costing of required road works; and
- Compliance with Heavy Vehicle Regulations.

Bankstown and Strathfield Council submissions considered traffic issues and retained the services of traffic consultants to advise them on the traffic assessment undertaken in the EA. Canterbury Council also addressed traffic issues. The issues raised in the Strathfield and Canterbury Council submissions included:

- Local area traffic management and "rat running";
- Intersection analysis and performance, specifically Roberts Road and Norfolk Road and the ability of B Doubles to use that intersection;
- Wentworth Street, including its condition and the requirement for approval for access;
- Alternative entry and exit locations to the site;
- Network modelling and performance and management of operational traffic;
- Management of construction traffic; and
- Parking and access to the site for employees by public transport.

The issues raised in Bankstown Council's submission included:

- Traffic on Boronia Road / Juno Parade;
- Turning movements for trucks, especially B Doubles on Roberts Road at Norfolk Road and Juno Pde, and at Hume Highway and Cosgrove Road;
- The need for the access to be at Cosgrove Road rather than Wentworth Street, with a one way pair including Gould Street;
- Traffic management issues in Bankstown to avoid rat running by trucks and by other vehicles avoiding congestion; and
- Specific criticism of the modelling and analysis undertaken in the EA.

Responses

The issues raised by members of the community are generally addressed in the submissions by the RTA or Councils. A number of submissions raised the issue of the calibration of the traffic model used. The Independent Panel requested that the model be recalibrated to increase acceptance against the calibration criteria used and that the data should be assessed against 2002 screenline counts. This new analysis is provided in Appendix E. The recalibrated models were reviewed and are regarded as suitable for use in the transport assessment of the project. They confirm the level of base network activity and the marginal impacts that the proposed ILC would have on the surrounding traffic.

A summary of the comments provided by RTA and our responses to those comments follow. Detailed responses are provided in Appendix C.

Table 3-2: RTA Issues and Responses

Issues	Responses
In the RTA's view – some of the assumptions in the EA are optimistic. The rate of development growth is not anticipated to be as high as that proposed.	Traffic growth may be greater than local development growth on certain roads due to through traffic, and switching away from congested routes.
Nor is the degree of backloading likely to rise from the current 8% to 30% without significant improvements to goods handling in the industry and / or technological innovation	30% backloading was accepted for use in the Port Botany Expansion EIS. This target is expected to be reached at Enfield due to an increase in multiple vehicle trip cycles, and the multiple and complementary container business types on site.
Over time, the number of B-doubles accessing the site is expected to increase. This may reduce total number of heavy vehicles accessing the site	An increase in B-double use may reduce total traffic generation, although the impact of a smaller number of larger vehicles is likely to be similar to the stated impacts.
The key intersections still have some capacity (with the exception of Punchbowl Road / King Georges Road) but without detailed SCATES modelling it is difficult to determine best operating options for these intersections	We consider that the INTANAL analysis presented is sound for the purposes of evaluating intersection performance. The SKM traffic assessment provided comparable current intersection performance to the RTA assessment.
Provided the appropriate widening and roadworks are carried out, access to the site via Cosgrove Road and Norfolk Road is considered to be less detrimental to traffic flow than if Cosgrove Road remains a two-way road. While the one-way pair option of Cosgrove Road and Gould Street was dismissed earlier in the study, it should be re-examined as it has several benefits. It is thought that a SCATES analysis would show traffic signals operating more efficiently at the 2 intersections with the Hume Highway.	See previous comment
It would also allow retention of on-street parking on Cosgrove Road, something all the industries were adamant about.	Agree that this would be a benefit of the one-way pair option. It should be noted, however, that the current ILC proposal for using Cosgrove Road as a second access does not limit on-street parking.
Modelling Results Using "SCATES"	
The RTA has undertaken detailed modelling of the road network surrounding the Enfield site using SCATES model and has concluded that the SKM traffic analysis was not comprehensive enough to indicate the operational performance of linked intersections along Roberts Road and also along Hume Highway.	SKM did not analyse the linked junctions as it was considered that the junctions could be assessed as stand-alone junctions. The key reason being the distance between the respective intersections. The analysis undertaken by SKM is considered to be robust.

The RTA has investigated a number of options to improve the current and future performance of the following key intersections using its SCATES model. The modelling results show that any additional loading of heavy vehicles on the road network will adversely impact on the operational performance of the above intersections both in the construction phase and by 2016. Even though the number of heavy vehicles are relatively small compared to the total traffic volumes our modelling shows their impacts are significant. Our modelling also shows that the operational performance of the road network will be improved with a one-way pair option using Cosgrove Rd/Gould St.	SKM analysis shows that the development does not have a significant impact on the performance of the intersections. This is documented in the EA. SKM modelled the one-way pair subsequent to the submission of the EA. The intersection of Cosgrove Road / Hume Highway is improved by the one-way pair in the short term.
Cosgrove Rd/Hume Highway We agree with the SKM analysis that this intersection needs upgrading. However, the operational performance of this and other intersections along the Hume Highway would be improved by a one-way pair option by making Cosgrove Rd (south bound) and Gould St (northbound) as a one-way pair. The total cost of works required at this intersection is estimated at about $3m.	In the short term the performance of this intersection will improve. However, wider network issues still need to be taken into consideration.
Sydney Ports Corporation (SPC) claims that this entry/exit point at Cosgrove Rd would only be used by a small number of heavy vehicles to access the Intermodal Logistics Centre (ILC). The RTA is, nevertheless, concerned that additional vehicles from the ILC will impact the intersection. In view of the cost involved in upgrading this intersection it was agreed that SPC would submit, for consideration by the RTA, measures to limit the number of heavy vehicles from using Cosgrove Rd as an entry/exit point. This may obviate the need to upgrade this intersection in the short term.	SPC will submit, for consideration of the RTA, measures to limit the number of B-Doubles leaving from the ILC via Cosgrove Road during AM and PM peak periods.
Roberts Rd/Norfolk Rd This intersection performs adequately now. However, with the ILC in place there would be a need to upgrade this intersection to accommodate 26m B-Double turning movements into/out of Norfolk Rd onto Roberts Rd for both physical turning capacity and safety reasons. The cost of these works is estimated at about $3.6m. SPC have agreed to pay for these works.	SPC is committed to improving the layout of this junction in consultation with the RTA to enable improved access for B Doubles at this point. A breakdown of the costs has not been undertaken. This will be undertaken during detailed design.
Local Area Traffic Management	
The area bordered by Roberts Road, Hume Highway and Juno Parade is predominantly residential, containing a number of schools. For this reason it is important that heavy vehicle movements associated with the ILC be constrained to the major road network and not travel through residential areas when travelling to or from the ILC.	The movement of ILC trucks through the residential area will be restricted and managed through LATM measures to be undertaken in consultation with the RTA and Councils.
A range of traffic management measures will be required in the area to ensure that these movements are deterred, while still allowing access by residents and minimal impact on existing bus routes. While detailed design of these measures has not been undertaken, it is anticipated that up to $1 million will be required.	Costing of LATM measures has not been undertaken. The key measure is the redesign of Roberts Road / Norfolk Road intersection to prevent vehicles from accessing the residential areas. The possible movement of ILC trucks through the residential area will be restricted, and managed through LATM measures to be undertaken in consultation with the RTA and Councils.
Costing of Required Road Works	
The RTA currently does not have any plans or funds available for future widening of the Hume Highway at Cosgrove Rd or at the other intersections mentioned above for the foreseeable future.	Noted.

The ILC will be severely constrained in its operational performance if the intersection improvements are not made during the construction phase of the ILC. Improvements will be required at the key intersections of Roberts Rd/Norfolk Rd as well as at the Hume Highway/Cosgrove Rd intersection if the ILC is to perform adequately.	It is not considered that the ILC will be severely constrained in its operational performance if the improvements are not made during the construction phase of the ILC. However, SPC will undertake to improve the junction of Roberts Road / Norfolk Road at this stage. No improvements are considered at the Hume Highway / Cosgrove Road intersection.
Compliance and Heavy Vehicle Regulations	
The RTA welcomes measures to ensure that heavy vehicles travelling to and from the ILC use appropriate routes and do not travel through residential areas. The RTA is happy to be consulted during the development of Local Area Traffic Management (LATM) measures, particularly in relation to speed zoning, noise reduction and emissions management.	Appropriate LATM measures will be considered to prevent heavy vehicles from the ILC using residential streets to access the arterial road network. 3-tonne load limits are already in place.
The RTA supports the proposal that all traffic is accommodated on-site. The RTA also supports the development of a site traffic management plan to bind all lessees and transport operators to a central objective of developing the ILC site as a model of good practice. The RTA is happy to be consulted during its development.	Noted.

Summaries of the main comments from Strathfield and Canterbury Councils and responses are provided in Table 3-3. Full details are provided in Appendix B.

Table 3-3: Strathfield and Canterbury Council comments on Traffic and Responses

Local area traffic management and rat running	
Smaller freight vehicles would find alternative routes via local streets. Access and egress to / from the site is being directed to intersections already over capacity with current traffic volumes which generally tends to create "Rat-Runs" through residential streets. Local area traffic management measures for Cosgrove Rd and surrounding streets should be further investigated to optimise the access / egress arrangements to the proposed site. Cosgrove Road / Punchbowl Road - The EA identifies the residential land use on the southern end of Cosgrove Road, however, there is no firm proposal of how trucks will be prevented from using this intersection. This issue is particularly important given the fact that the aaSIDRA analysis currently shows the intersection of Cosgrove Road and the Hume Highway as being oversaturated with conditions deteriorating over time. The temptation of users of the Enfield ILC to seek alternative access and egress points from the site would be significant.	Any vehicle above 3 tonne tare and not articulated is identified in the EA as a light truck. The existing traffic management measures in residential streets surrounding the development include extensive use of load limits (to 3 tonnes or less). The existing performance of the intersections is an issue for the RTA and local Councils to alleviate. Enfield ILC contributes only a marginal increase to the volumes of traffic on the road network. Measures will be put in place by SPC to restrict ILC trucks from using residential streets and leaving the ILC site via Cosgrove Rd during AM and PM peak hours. Local area traffic management measures for Cosgrove Road will be considered during detailed design to prevent large vehicles travelling south on Cosgrove Road. No intersection improvements are being considered for the Cosgrove Road / Hume Highway intersection. The use of Cosgrove Road south by trucks will be monitored by SPC and controls implemented to prevent trucks travelling to and from the ILC site from using Cosgrove Rd south. However, heavy vehicles currently use this road to access the industrial land uses along Cosgrove Road. Truck access to the residential area east of Cosgrove Road is limited by the chicane in Madeline Street and Blanche Street being one-way westbound.
Intersection analysis and performance	
Disagrees with the statement that the Roberts Rd / Norfolk Rd intersection is operating with spare capacity at level of service B and requires no enhancement. We suggest that this intersection is already over saturated with current traffic volumes currently at level of service F and requires complete re-construction and re- modelling to include SCATS	Our traffic counts and analysis indicate that the average delay for all vehicles at this intersection is 20 seconds in both the AM and PM peak hours. While the average delay on some movements may be high, the average delay on others would be minimal, resulting in an acceptable overall level of delay. Our analysis is presented in the report which states that the

modifications. Norfolk Rd is approved only for use by 23m B-doubles and Wentworth St is not approved for B-double use. Traffic counts confirm that many of the critical intersections pertinent to this proposal carry significant volumes of traffic outside the hours quoted. Considering these volumes and the documented peak period for truck movements from the ILC is 1430hrs with 103 movements, this in my mind considerably flaws the efficient and effective movement of heavy vehicles both to and from the proposed site. A number of intersections have been omitted which this council deems critical to optimal traffic flow in the area. Council believes that the following intersections are considered critical to traffic operations in the area and have not been assessed by SKM in their proposal. - Hume Highway/Waterloo Road - Liverpool Road/Homebush Road - Arthur Street/Richmond Road The current geometry of the Roberts Rd / Norfolk Road intersection is only suitable for B-Doubles to enter from the south and exit to the north. With the exception of the northbound right turn from Roberts Road into Norfolk Road and the right turn movement from the eastern side of Norfolk Road, all other movements provide inadequate turning paths for B-Doubles. The modelling conducting by SKM indicates that the dominant movement of HGVs to and from the proposed site will be to the north and northwest. The volume of traffic and level of congestion on Roberts Road will inhibit the ability of long vehicles to safely make wide turns in order to enter from or exit to the north. it is recommended that the intersection of Roberts Road and Norfolk Road be completely reconfigured in order to adequately meet the needs of this proposal.	intersections operate at an acceptable level of service. Norfolk Road / Wentworth Street is approved for use by 23m B-doubles between Roberts Road and Metro Smallgoods. It would be appropriate to extend the approval to the ILC entry. Council and the RTA have previously (June 2005) undertaken tests with 25m B-doubles at Roberts Road / Norfolk Road. The testing indicated a problem with the left turn into Norfolk Rd. This turn would be possible with intersection improvements (i.e. a splayed intersection approach – left turn in from Roberts Road). Council indicated no problems with other movements at this intersection with a 25m B-Double. The peak period was analysed in terms of traffic impact of the proposed development. The survey data from the tube counts indicate that this is the peak period which should be considered for overall network performance i.e. analysed worst case analysis, which is consistent with RTA requirements. The intersections analysed were considered to be the most critical to the impact assessment. A meeting was held with the RTA where additional intersections were requested and undertaken. Hume Highway / Waterloo Road was analysed in the studies for the previous proposal in 2001. The LoS at this intersection was A. It was not considered that conditions have significantly changed at this intersection since 2001. Liverpool Road / Homebush Road – this intersection is to the east of the proposed site. The traffic distribution shows that approximately 1 HGV will use this intersection from the site and therefore not considered to be adversely impacted by the ILC – i.e. the market / destination is to the west of the site. Arthur Street / Richmond Road – No vehicles from the ILC are anticipated to use this junction and therefore it has not been considered. Council and the RTA have previously (June 2005) undertaken tests with 25m B-doubles at Roberts Road / Norfolk Road. The testing indicated a problem with the left turn into Norfolk Rd. This turn would be possible with intersection improvements (i.e. a splayed intersection approach – left turn in from Roberts Road). Council indicated no problems with other movements at this intersection with a 25m B-Double. The other two intersections mentioned (Roberts Rd / Juno Pde and Hume Highway / Cosgrove Rd) are already approved to provide appropriate access for 25 m B – doubles. SPC has agreed with the RTA that this intersection will be enhanced to improve traffic flow, including B Double movements, i.e. SPC to consider a left turn slip lane to improve access to the ILC.
Wentworth Street condition and approvals	
Council is the authority for approval for any access to Wentworth St. Council would not normally approve this access, as there are already a number of access points to this site. Council needs to have the ability to approve the proposed bridge alignment in terms of grade and site distance.	An application for access to Wentworth Street will be submitted at the appropriate time. Council will be consulted in the detailed design phase over the access and the bridge design. Based on operational requirements, existing agreements with RailCorp and known on site and off site constraints (including the New Marshalling Yards), the final location of the bridge will most likely not vary more than 20m either side of its current identified landing point. The two points of access as identified in the EA are the optimum locations for the efficient and safe operation of the ILC. That is, there are a number of equally important reasons for the need for two access points, namely to: • meet operational and Occupational Health and Safety

	requirements for two points of access and egress for emergency and evacuation purposes eg. in the event that an accident or spillage results in the closure of one means of access, another must be available to allow the operations to continue. • optimise traffic movements within the internal road system based on the multiple operating sites. • optimise off site traffic movements based on the origin and destination of containers within the area denoted as the ILC market catchment. • provide driver flexibility in the choice of two designated truck routes based on emerging traffic conditions. Eg. accident on Cosgrove Road.
The EA states that Wentworth Street "south of Mayvic Street has deteriorated and the pavement needs rehabilitation in addition to upgrade works (widening). Although a detailed survey has not been conducted as apart of this review, the on-site inspection indicated that the current radii of the intersection Wentworth Street and Norfolk Road are not adequate to cater for long vehicles, in particular B-Doubles. Although a detailed survey has not been conducted as a part of this review, the on-site inspection indicated that the current radii of the intersection Wentworth Street and Norfolk Road are not adequate to cater for long vehicles, in particular B-Doubles.	Wentworth Street is already heavily used by large vehicles, and is approved for use by 23m B-doubles. The surrounding land use is industrial, with many heavy-vehicle generating developments already in place. The use of Wentworth Street by the ILC is consistent with current usage of this road.
Alternative entry and exit	
Insufficient documentation has been made available regarding the investigation of alternative entry / exit points to the proposed site. Consideration should be give to the possibility of linking Gould St to the existing internal road within the site.	Several access points have been considered and thoroughly documented by Sydney Ports Corporation. This was summarised in the EA.
Network modelling and performance, Operational traffic	
The EA concludes that "where the heavy vehicle volume increases, it is generally only by a small margin. In most cases, the change in peak hour traffic volume is negligible." Whilst this is true, the NETANAL model significantly underestimates the current level of congestion on the regional road network and the fact that even a small increase in the number of heavy vehicles will have a major impact on the operation of the regional roads in the area, and the operation of the local roads connecting to them. The assessment area used is too small to enable the evaluation of the network wide implications of this proposal. The EA fails to consider the impact of the recently opened M7 Motorway and the proposed M4 East.	Independent counts were undertaken to calibrate the base model. The model was verified and calibrated – See Appendix C of the full Transport Working Paper (Appendix B) in the EA. The results of the calibration process show that the model used is acceptable for this analysis – and the model updated to reflect existing conditions. The area of impact was discussed with the RTA. The M7 Motorway was included in the model. The proposed M4 East Motorway is not considered as the proposal has not been endorsed by the NSW Government.
Construction traffic	
Construction staff traffic impact. At peak time up to 240 staff will be employed plus 75 construction vehicles daily. The closest train stations are 2.3 km away and the bus service does not adequately service the site. Based on this, it may be safe to assume that private vehicles will be used and therefore parking facilities will need to be considered A traffic management plan (TMP) shall be submitted to and approved by Council for all demolition, excavation and construction activities associated with the development taking place and prior to the issue of a Construction Certificate.	The movement of all 240 staff within the network peak hour is a worst case scenario, and it would be likely that there would be some spreading of arrivals and departures. SPC proposes to cater for all on-site parking. The requirement for parking has been discussed within the EA in Section 3.6.1 of Appendix B. The actual parking arrangements would be addressed as part of the detailed design stage. A Construction Traffic Management Plan would be prepared prior to construction commencement taking into consideration the required demolition, excavation and construction activities.

Parking and public transport	
Public Transport - Given the poor access to public transport for workers at the site and their likelihood of using their own vehicles to travel to and from work, Strathfield Municipal Council requests more detailed proposals of on-site parking provisions for private vehicles.	On-site parking will be provided for all employees. The requirement for parking has been discussed within the EA in Section 3.6.1 of Appendix B. The actual parking arrangements would be addressed as part of the detailed design stage.
Canterbury Council is supportive of denying heavy vehicle access from the southern end of Cosgrove Road (where it meets Punchbowl Road), as this should have the effect of limiting heavy vehicle movements through local streets in Canterbury City to reach the site. Council will however want to be satisfied that the configuration of the southern end of Cosgrove Road is satisfactory to limit heavy vehicle movements, as no details are provided in the Environmental Assessment.	The residential area east of Cosgrove Road has a heavy vehicle limit in place. Cosgrove Road is currently used by some heavy vehicles accessing existing land uses adjacent to the ILC site. Sydney Ports will not be attempting to control movements unrelated to the ILC. Given the market area for the ILC, there should be no need for ILC trucks to use Cosgrove Road south of the site access point. Nevertheless, the movement of vehicles from the Cosgrove Road entrance will be monitored and access / egress controls implemented if required.

Responses to the major issues raised by Bankstown Council are shown in Table 3-4. A more detailed response is provided in Appendix B. In particular, the technical comments provided by Parsons Brinkerhoff are address in the Appendix.

Table 3-4: Response to Bankstown Council

Issues	Responses
Alternative Access Route Council is also concerned that the EA has not seriously considered an alternative access route to and from the site (specifically a paired intersection involving Gould Street and Cosgrove Rd onto the Hume Highway) which we believe could accommodate all traffic entering and leaving the facility, and improve integration with the arterial road network and negate the need for access via Roberts Rd, and as a result would not generate undue traffic impacts to the residents of Greenacre.	SPC has considered alternative access points as part of the previous studies in 2001. A paired intersection has been considered subsequent to the submission of the EA. However, the intersection between Cosgrove Road and Hume Highway still requires upgrading in the future. The junction is unable to accommodate 100% of traffic from the site even with the upgrade in the future.
Only 2 access points are proposed into the site. These are via Cosgrove Rd, from which trucks will gain access to the Hume Highway and thence to Centenary Drive, and secondly, via a bridge to Wentworth Street and thence onto Norfolk Rd and onto Roberts Rd. It should be noted that the traffic modelling shows that almost all the traffic will go in and out via this latter access way. The impact of the additional traffic generated by the proposed terminal was assessed by a model (calibrated by local traffic surveys), which modelled natural traffic growth projections for the area and adding the traffic generated by this development proposal. This assessment was analysed both with and without the proposal going ahead, to compare the effect of background traffic growth with the impact of the development. This analysis indicated that for almost all roads where the traffic counts were made that for peak periods, in both the morning and afternoon, there would be an inappreciable impact on traffic volumes as a result of truck movements generated by this facility.	The distribution in the model minimises the travel time for ILC vehicles. As the majority of destinations are west of Enfield, the Roberts Road access is more popular. The expected split between Norfolk Road and Cosgrove Road is 75%/25%, due to the layout of the site and operations. Enfield ILC contributes to <1% of overall traffic and therefore the impact of Enfield on the local and regional road network is negligible.
Site Access arrangements, and associated impacts on the Local Road Network. The traffic projections included in the EAR indicate that almost all traffic entering or leaving the site will do so via the access	The distribution in the model minimises the travel time for ILC vehicles. As the majority of destinations are west of Enfield, the Roberts Road access is more popular. The expected split between Norfolk Road and Cosgrove Road is 75%/25%, due

onto Roberts Rd. Trucks will turn either north or south along Roberts Rd depending upon their final destination. Only 1 or 2 trucks are shown entering or leaving the facility via the Cosgrove Rd access point and then turning onto the Hume Highway from where they either go east or west along the Hume Highway or north along Centenary Drive. Whilst the assessment has shown that the traffic impacts are minimal in terms of traffic volumes and impacts on intersection capacity, it will remain the case that some 1160 trucks per day will be entering or leaving the site on the roads through Bankstown as a result of the proposed development.	to the layout of the site and operations. In addition, it should be noted that there are some 7000 heavy vehicles (11% of total) currently using Roberts Road each weekday, and about 4600 heavy vehicles (9%) using the Hume Highway. The ILC vehicles will not be concentrated on a single road, allowing any impact to be more easily absorbed.
This is a significant increase, and is likely to be associated with other environmental impacts, including traffic noise and congestion, air pollution, potential disruption to existing land uses, disruption to existing residential character of existing roads in Greenacre.	The other environmental impacts have been considered and presented in the appropriate sections of the EA.
Impact on Boronia Rd/Juno Pde One of Bankstown Council's main concerns about traffic impacts is the potential for impact on the roads in Bankstown caused by the use of roads passing through residential areas. We note that Roberts Rd and Boronia Road have both been identified as suitable for use by trucks entering and leaving the facility. Whilst the EA shows that projected truck volumes for Boronia Street will be low, we object strongly to the use of Boronia Rd/Juno Pde as a route for trucks associated with this facility. The justification for trucks using Boronia Rd/Juno Pde is that it is classified as a State Road. Furthermore, the identification of Boronia Rd and Roberts Rd as State Roads has already lead to them being used in a way that has resulted in significant cumulative impacts and loss of amenity to the people that live along these roads.	Boronia Road / Juno Parade are State Roads and also permitted routes for B-Doubles. They have not been nominated for use by ILC vehicles, but identified as potential routes that could be used by vehicles accessing the ILC facility. Our modelling indicates that the volume of ILC traffic that would use these roads is low. The ILC traffic using Boronia Road accounts for less than 1% of future traffic (6 vehicles per hour in AM and PM peak). It is not considered that this will adversely impact on Boronia Road.
Other Impacts on Local Roads. Bankstown Council is also concerned about the possibility of truck movements along other roads with a residential character. Again this may arise from trucks leaving the facility and travelling along Roberts Rd from where they could easily attempt to access the Hume highway by using non - State roads such as Rawson Rd, Norfolk Rd (and other like roads). Another source of impact on the local roads which has not been assessed in the EA is the likely increase in the use of residential roads in the area by cars that are taking detours to avoid the state roads that will become busier as a result of the additional trucks using them. This matter has not been addressed in the EA, nor have any mitigation measures proposed. It could however be reduced if the issue of access to and from the site was reviewed such that essentially all of the access was not provided via Roberts Rd, and better levels of access were provided to Cosgrove Rd and the Hume Highway.	The movement of ILC trucks through the residential area will be restricted, and managed through LATM measures to be undertaken in consultation with the RTA and Councils. The ILC would not significantly impact on delays at intersections in the area. The potential for rat-running for large vehicles will be addressed through the LATM measures that SPC would develop in consultation with Council and the RTA. Rat-running by private vehicles is more difficult to manage without detrimentally impacting on the route choice of residents and local public transport vehicles. The ILC contributes to 1% of the traffic on the road network. Background traffic growth is the contributor to diminished future road and intersection performance.
Concerns about the Modelling Included in the EA. The underlying assumption is for container activity of 300,000 TEUs to generate traffic from the proposed development. However the EA did not assess the traffic impact as a direct result of the change in this assume throughput, that could eventuate if some of the other proposed intermodal terminals do not proceed, or if there is a variation in rail throughput: • The EA traffic models for the morning peak periods cover the one-hour time period within each of these peak periods. However the Sydney commuter road network has longer commuter peak periods. Ideally the morning model included in	The ILC is designed to handle up to 300,000 TEU per annum. The models used in the EA assess the peak one-hour period in the morning and afternoon. These are the periods of maximum impact. Assessment of one-hour peak periods is standard industry practice.

the EA should have had a 2 hour peak period from 7.00am - 9.00 am while the evening peak periods should have had a three hour period from 3.00pm - 6.00pm;	
• The EA traffic model was not benchmarked against the Transport and Population Data Centre's Metropolitan Strategic Travel model;	The 2005 base trip table has been calibrated for observed volumes at some 15 key locations in the Enfield area, identified in the EA.
• It is unknown how the existing base year trip matrix was derived. This could lead to considerable variations in the traffic impacts from the facility;	The trip table from which the base table was calibrated has evolved from previous projects, where calibration has also been undertaken.
• The traffic model included in the EA does not appear to have captured the effects of regional traffic surrounding the proposed facility, as the models were calibrated using counts undertaken within the immediate vicinity of the site. The use of RTA screenlines would have helped in this regard;	The counts collected for this project do include regional (as well as local) traffic that use the road network in the vicinity of the ILC. In the context of the study the model is not being used to forecast traffic diversion due to a new link or other network issue. The impact of the ILC is confined to a relatively small area (see Figure 2.2 of the EA Appendix B, which was discussed with the RTA at the commencement of the study). It is appropriate to concentrate on the sub-regional level rather than the wider network issues alluded to.
• The EA traffic model has not met major screenline calibration standards thereby resulting in less robust modelling results;	The cited additional calibration measures are only relevant to a regional model assessing wider implications of network change (eg a new link or road closure). The impact of the ILC is limited to the sub-regional level, and the adopted calibration process is appropriate.
• The EA indicated that the 2016 base trip matrix was developed using population and employment forecasts provided by DIPNR, but has not shown the changes between 2005 and 2016;	SKM used trips matrices for future trips relevant to 2016. The 2016 matrices have been used reliably by SKM for several years to forecast future traffic growth. Specific and significant changes were added to the matrices to reflect Port Botany Expansion and Sydney Airport forecast growth (as documented in the EA).
• The EA did not indicate which vehicle categories were included in the traffic model's commercial trip table nor did it explain the process applied for developing the future commercial trip table;	The commercial vehicle trip table includes an estimation of heavy vehicle activity, and was calibrated in the local area for 2005 counts. The future commercial vehicle matrix takes into account growth in industrial activity across Sydney.
• The traffic assignment technique used is also unclear and how commercial vehicles were converted into equivalent passenger car units;	The truck matrix in NETANAL is used to estimate the effect of heavy vehicles on link and intersection capacity. It is not used on a stand-alone basis. The proportion of heavy vehicles in the traffic stream is one of the inputs to the INTANAL intersection models.
	The PCU factors are documented in the working paper. The INTANAL default pcu factor of 2 for heavy vehicles was not modified for this project.
Some of these deficiencies may on their own be of minor significance. However, when considered cumulatively they indicate that it is simply not possible to have confidence about the findings of the traffic analysis. Given the significance of traffic impact to this proposal, this is a matter of great concern.	The modelling approach used for the EA is appropriate for the assessment of the impact of the ILC. The findings of the traffic study are supported by an analysis of existing conditions, which reveal that many intersections around the ILC are already approaching capacity. Future background growth in traffic volumes, independent of the ILC, are likely to result in conditions as outlined in the traffic study.
Concerns About Intersection Performance.	
In reviewing the EA, Council considered that it seemed to have glossed over the issue of intersection performance, and the adequacy of existing intersections.	The key intersections surrounding the ILC were analysed. The intersection analysis and reporting undertaken is appropriate for the assessment of the impact of the ILC.
One reason that we considered this to be the case was because of Councils knowledge of the road network in Bankstown. In particular, we know that the Roberts Rd/Norfolk Rd intersection is already performing very poorly, as there are often pronounced northbound delays along Roberts Rd in the AM peak. However, this did not seem to be suitably acknowledged in the EA.	The analysis undertaken was based on data collected by an independent traffic counting company, specifically for this project. While there may have been congestion experienced at times, conditions are such that satisfactory Levels of Service are achieved across the space of an hour. The analysis undertaken as part of the EA is industry standard practice.
To further consider the issue of intersection performance, PB were asked to address this matter by the "swept path" technique. This technique looks at the actual physical space occupied by	Swept path analysis was undertaken subsequent to the submission of the EA, to determine possible traffic

large vehicles as they turn through intersections, and provides a more thorough and reliable way of assessing intersection performance. The EAR did not include a swept path analysis of large vehicle movements at critical intersections, and Council (and PB) considered this to be a major deficiency in the traffic assessment.	management measures for the Roberts Road / Norfolk Road intersection. Subsequently, swept path analysis has been undertaken on Hume Highway / Cosgrove Road and Boronia Road / Roberts Road intersections. Strathfield Council and the RTA have previously (June 2005) undertaken tests with 25m B-doubles at Roberts Road / Norfolk Road. The testing indicated a problem with the left turn into Norfolk Road. This turn would be possible with intersection improvements (ie a splayed intersection approach – left turn in from Roberts Road). Council indicated no problems for other movements at this intersection with a 25m B-Double.
Intersections selected for a swept path analysis were: • Roberts Rd and Norfolk Rd • Roberts Rd and Juno Pde; and • Liverpool rd and Cosgrove Rd.	These intersections currently handle large vehicles and Norfolk Road, Juno Parade and Cosgrove Road are all permitted for use by B-doubles. As such the use of these roads by the ILC should not be a concern.
PB found critical shortcomings in the ability of all 3 intersections to accommodate heavy vehicles, and suggested that they would all need to be upgraded. Whilst some of the turning movements were found to be physically possible, it may have meant for example making a left hand turn from a through lane. This was found to be undesirable since it could increase the risk of collisions and put vulnerable road users at risk, as well as delaying through traffic. Similarly, a right turn should not have to be made from through lanes, particularly when heavy vehicle movements of some 1200 movements per day are expected.	It is noted that these vehicles may not be able to make certain manoeuvres from their designated lanes, but this is consistent with swept paths of trucks and some public transport vehicles across Sydney. The right turn from Roberts Road into Norfolk Road has a designated right-turn bay.
The PB report also provides other information concerning the review of intersection performance included in the EA. It notes that the EA only assessed intersection capacity by considering level of service and delays, and that it did not show the extent of queuing or the degree of saturation. Normally an analysis of intersection performance would, besides considering level of service and delay would also include a review of the degree of saturation of the intersection and queuing, as this provides a more comprehensive understanding about how the intersection is performing.	According to the RTA's Guide to Traffic Generating Developments, "the best indicator of the level of service at an intersection is the average delay experienced by vehicles at that intersection." The criteria for Level of Service outlined in Table 4.2 of the Guide relate to average delays only.
The failure in the EA to consider these aspects of intersection performance is an oversight and means it is not possible to have the necessary level of confidence in the findings of the EA regarding intersection performance	Given the growth in background traffic, the ILC contributes to <1% of overall traffic. As such the statement is considered to be unfounded.
Other Council Concerns about Traffic	
Regarding traffic volumes, the EA finds that these are acceptable because they will be just a small component of the projected traffic growth in the area, and that any impacts that will occur on the road network or intersection capacity will be due to the natural increase in traffic, and that the RTA will then need to fix the resulting problems to the arterial road network. This is a rather disingenuous response to the issue and ignores the fact that the Sydney Ports proposal is responsible for a large volume of the traffic that will cause considerable problems, and that the performance of the proposed facility will be impacted by congestion at key surrounding intersections.	The ILC will contribute <1% of traffic and its contribution to any network deficiencies will be very minor.
Internal Traffic Management. This matter has not been properly addressed. In particular, there is not enough detail on how truck movements and employee generated movements will impact, especially at time of shift change over. There are many industrial sites in Bankstown where shift changes generate serious traffic problems as employees try to access State roads. In this case the problem would be exacerbated with trucks also attempting to leave the site at what will be close to the peak projected time for truck movements to and from the facility. This issue needs further consideration, and again could be ameliorated to some degree if more heavy vehicle access could be provided via	The impact of shift changeovers would be mitigated by the diverse range of origins and destinations of staff, and the site layout. There would be greater use of Cosgrove Road by staff than there might be by trucks. Furthermore, many of the staff employed at the ILC would move from other jobs and may well be travelling at that time regardless.

Cosgrove Rd. Preferred Alternative Access Arrangement. Bankstown Council wishes to suggest an alternative access arrangement to and from the site, which is to provide primary access via Gould Street and Cosgrove Rd.	SPC previously considered numerous alternative access points for the site. The conclusion was that Norfolk Road / Roberts Road and Cosgrove Road / Hume Highway were the preferred access points. Access to the site via Punchbowl Road is not permitted. An analysis was undertaken subsequent to the EA of the one-way pair option. This indicated that while satisfactory operation of the 2 linked intersections (Gould Street and Cosgrove Road) would be achieved in the short term, with background growth the 2-lane eastbound constraint on the Hume Highway would result in unsatisfactory performance in the future without the ILC. Even with 3-lanes provided eastbound, the Cosgrove Road intersection would be at LoS E with 100% of ILC traffic using it. This is the same result as documented in the EA for 100% of ILC traffic using the Cosgrove Road intersection. Therefore it is not feasible to channel all ILC vehicles through this intersection. Furthermore, it would add further pressure to the Hume Highway / Centenary Drive intersection, as a large proportion of ILC trucks would use Centenary Drive. Only allowing access via Cosgrove Road would take traffic off the Centenary Drive / Roberts Road overpass and direct it through the at-grade intersection instead.

It should also be noted that a Traffic Working Group involving Strathfield Council, Bankstown Council and Roads and Traffic Authority and Sydney Ports Corporation has been in existence since May 2005, and to date has met 6 times. The objectives of the group are to:

- Identify council concerns about traffic;
- Share information about traffic impacts foreshadowed by the development;
- Focus on 'local' impacts ie impacts on local residential streets and also look at strategic road networks;
- Discuss and decide on strategies which could be used to mitigate these local impacts;
- Decide the way forward on the implementation of these strategies.

The group does not have the charter for implementing any measures, only to suggest and recommend to the relevant authorities. Sydney Ports Corporation with the co-operation of Councils and the RTA expects the Group to continue throughout the life of the operation of the ILC to ensure any local community issues on traffic surrounding the site are addressed in a responsive and constructive manner.

3.4.3 Noise and Vibration

Issue Summary

Noise impacts were identified by the community as of major concern. Of particular note were impacts due to construction activity, site operational works (especially night operations), increased general vehicle and truck movements in the locality of the ILC site, and the consequences of increased rail movements in the freight rail corridor. Vibration effects from trucks and trains were of concern to a number of people.

DEC and NSW Health also provided detailed submissions which addressed the issues of noise.

Responses

The main issues raised by the community were also addressed by DEC and NSW Health. Responses to the main issues raised by DEC and NSW Health are summarised in Table 3-5, below. Technical details, including supplementary modelling, are provided by Renzo Tonin and Associates (RT&A) in Appendix F. Rail noise is addressed in Section 3.4.5.

Table 3-5: Responses to Noise Issues

Construction Noise	
The construction noise levels provided in the EA indicates that there is the potential for an increased risk of health effects from noise exposure for all residences at various stages of construction. NSW Health indicated in its Director General requirements that noise impacts upon sensitive receptors should be specifically considered. This does not appear to have been addressed and consequently the predicted impact of construction noise upon St. Anne's School, Strathfield South High School and other sensitive receptors cannot be-ascertained. It is likely, as with many major construction projects in an urban area, that exceedance of noise goals will occur after feasible and reasonable noise mitigation measures have been used. Section 4.12.5 lists the proposed construction times as 7am to 6pm Monday to Saturday. However, the DEC advises that normal construction times should be 7am to 6pm Monday to Friday and 8am to 1pm Saturdays and no work on Sundays and Public Holidays. Works should not be conducted outside these hours unless there is specific justification for doing so. In addition a, a community consultation program and a 24 hour complaints handling system should be implemented prior to any out of hours works.	Construction noise was assessed in the report to the nearest affected residential receivers, as these were closer to the site than other sensitive receivers, including St. Anne's School and Strathfield South High School. Further to this the Strathfield South High School is shielded from the site by the industrial area to the north of the site and the existing noise wall along the southern boundary of the school. There are no DEC criteria that distinguish appropriate levels for residential receivers versus non-residential receivers and impacts at non-residential locations would be similar to or less than those identified for residential locations. Therefore the assessment that has been undertaken for the construction phase noise is considered appropriate. Limiting construction hours will serve to extend the duration of the works. SPC considers the slight increase in working hours on Saturdays is warranted to ensure the overall construction duration is as short as possible. SPC will seek to maintain the construction times as specified in the EA. However, an undertaking will be provided, and written into the Noise Management Plan, that high noise operations will not be undertaken after 1pm on Saturdays.
Operational Noise	
The statement of commitments for noise performance does not include a commitment to achieve acceptable noise levels at sensitive receiver locations, which, in this context means achieving noise levels that substantially comply with the Governments Industrial Noise Policy (INP). The NIA has indicated that, under noise enhancing weather conditions that have been determined to be a significant feature of the area, the proposal will generate noise levels that significantly exceed the INP PSNL. The predicted levels significantly exceed the levels that DEC would normally license to. On this basis the statement of commitments are not considered capable of delivering acceptable noise outcomes. NSW Health indicates that Table 11-7 (Chapter 11) of the Environmental Assessment highlights the predicted exceedances of operational noise criteria when compared to the NSW EPA Industrial Noise policy guideline values. It is noted that predicted noise levels for two of the six residential sites considered exceed criteria levels during calm and isothermal weather conditions even after mitigation measures are used. Exceedances are greater under adverse weather conditions with these adverse wind conditions expected to occur approximately one third of the year. The exceedances have been predicted to be as much as 15dB above criteria. It is of further concern that noise impacts	Mitigation options were extensively reviewed as part of the EA. It is considered that at this stage of the project, when the design is still fairly flexible, all reasonable and feasible mitigation measures have been considered to reduce overall noise emissions from the site. Additional mitigation will need to be considered at the design phase to reduce noise levels to achieve compliance with the Project Specific Noise Levels (PSNLs). Any further measures considered would include source specific measures, such as limiting plant noise levels and use of local shielding (eg container stacks, sheds, buildings) in specific locations. These more specific design matters are difficult to determine at this stage of the project. However, in response to DEC's concerns regarding noise exceedances, the most likely or typical operational scenario and additional mitigation measures have now also been modelled from all available information known at this stage of the project, and the results of this assessment are presented in the RT&A Technical Memo in Appendix F. It is noted that noise-enhancing wind conditions do not necessarily occur for one third of the year from any single direction. Instead they are expected to occur for a range of different directions depending on the time of year and time of day – see the RT&A Technical Memo in Appendix E, which presents the outcomes of a more detailed analysis on wind data. This shows that different noise receivers are impacted for different seasons of the year and at different periods of the day. Given the above and consistent with the noise modeling for the "worst-case" scenario so as not to unnecessarily prescribe the operation of the site at this stage, a "worst case" noise

up to 7dB above criteria are predicted at St Anne's school. It is noted that the predicted values are based on the assumption that all noise sources operate concurrently ("worse-case" assessment). However, the noise consultants report noted that there is little to no reduction in noise impact between a "worse-case" scenario and "normal-case" scenario.	model was built and a conservative assessment was undertaken and presented in the NIA in accordance with all relevant noise policies and guidelines. The RT&A Technical Memo presents areas of conservatism which are built into the assumptions used in the NIA noise modelling for assessing impacts at night, and what effect each of these would have if one were to model a more realistic, likely or typical night operational scenario at this stage of the project. So in response to this, typical operational scenarios have now also been modelled from all available information known at this stage of the project, for the Day, Evening and Night periods respectively. For each of the three assessment periods, noise was modelled for calm conditions and for the worst-case wind conditions. Separate noise models for the 'intrusiveness' and the 'amenity' assessment periods, were run to allow for the direct assessment of impacts for each scenario during each of the three assessment periods. The results of these assessments are presented in the RT&A Technical Memo in Appendix F. In summary compliance is achieved with both the 'Intrusiveness' and the 'Amenity' PSNLs under calm and worst-case noise-enhancing wind scenarios, at all receivers with the exception of a few minor exceedances during adverse wind conditions of 1-2dB(A) at 3 locations and one 5dB(A) exceedance under adverse wind from one specific direction. These results do not include further additional noise mitigation measures, such as those discussed in the RT&A Technical Memo. Therefore, there is scope to further reduce noise emission levels from the operation of the site as part of the Detailed Design / EMP phase in order to comply with the PSNLs. Any further measures considered at the detailed design stage would include source specific measures, such as limiting plant noise levels and use of local shielding (eg container stacks, sheds, buildings) at specific locations etc as described in the RT&A Technical Memo in Appendix F. After all reasonable and feasible measures are considered at the detailed design stage all physical and management noise control measures will be incorporated into the EMP for the site to ensure the PSNLs are achieved.
Intermittent /instantaneous noise generation was assessed through the NSW Environmental Noise Control Manual in the form of a sleep arousal criterion. Exceedances of these criteria are predicted in all weather conditions, some by as much as 15dB (giving a 30dB increase from background). As this development intends to be an ongoing 24hour/7day a week operation it is important that community noise impacts strictly comply with noise criteria and it would be desirable to reduce this level below this criteria where practical. Intermittent /instantaneous noise generation should be kept to a minimum to reduce any potential adverse effect on health through both sleep disturbance and annoyance.	See response to DEC issue related to sleep disturbance (below).
The DEC notes that the Noise Impact Assessment presents only the result of an assessment of potential noise enhancing weather effects. The meteorological data used and the weather station location has not been presented in the NIA.	The NIA presents predictions under both calm-isothermal (acoustically neutral) conditions and adverse weather (noise-enhancing wind) conditions. The weather stations from which the meteorological data were acquired are Bankstown Airport AWS and the Lidcombe AWS. Information regarding wind was based on available AWS wind rose data – see the RT&A Technical Memo's Annexure 1 (in Appendix F). According to the NSW INP, prevailing winds above 3m/s (11km/h) are not considered in noise assessments as they do not increase noise impacts. Furthermore, noise measurements should not be undertaken when wind speed exceeds 5m/s (18km/h).

The DEC notes that the noise modelling considered two broad operating scenarios. The difference between the two scenarios is that Scenario 1 included both shunting locomotives (2x48class) and locomotives involved in moving a train set on to the site (3x81 class), while scenario 2 only considered the shunting locomotives. It should be noted that it is DEC's experience that older and noisier locomotives also operate on the Botany Goods Line.	SPC advised that, based on current information, 48-class locos will typically be used as 'shuttle trains' and 81-class locos will be used for rural bound trains. The issues of older and noisier locomotives are a result of new entrants to compete in a deregulated freight rail market. As the percentage of container movements by rail increases, the improved economic certainty will increase the commercial viability for further investment in more efficient rolling stock.
The NIA does not indicate the number of residences potentially affected by noise levels that exceed the Project Specific Noise Levels (PSNL) under noise enhancing weather conditions. The DEC notes that Table 4.12 in the NIA indicates that under calm isothermal conditions that 140 houses are predicted to experience noise levels slightly above the PSNL. The number of houses with significant exceedances above the PSNL during noise enhancing weather conditions is likely to be significantly more.	It is noted that the number of houses affected shown in Table 4.12 of the NIA is high as the noise model was conservative in not taking into account local shielding provided by residential and other non-industrial buildings off site. Such building data was unavailable for inclusion in the noise model at this stage. It is intended that building data be included in the detailed noise model to be run at the Detailed Design / EMP phase, which is expected to show a significant reduction in the number of houses affected. Therefore, an analysis of the number of affected houses would be more accurately conducted at the DD / EMP phase and after all additional reasonable and feasible noise mitigation options, as set out in the RT&A Technical Memo (in Appendix F), have been incorporated into the noise model.
It is clear from the NIA that widespread and significant exceedances of the PSNL are predicted. (In this case the PSNL are determined from the amenity criteria). Importantly, predicted noise levels are normally used to establish appropriate noise limits for an operation (where applicable). In cases where it is not possible to achieve the PSNL even after applying all feasible and reasonable mitigation measures, predicted noise levels may be used to set noise limits that are up to 5 dB above the PSNL following negotiation with the regulator and/or consent authority. In contrast, negotiated agreements would normally be required where predicted levels are still more than 5 dB above the PSNL after the application of all feasible and reasonable mitigation measures. In view of the likely number of noise-sensitive receivers affected by exceedances of the PSNL and the magnitude of these exceedances, it is recommended that: - Further mitigation measures are investigated with a view to reducing the extent and magnitude of exceedances of the PSNL to within an acceptable range, including through the use of best-practice rolling stock on the ILC site; and - Additional consideration is give to the extent to which negotiated agreements may be feasible and reasonable mitigation measure, for example land use mapping with overlaid noise contour plots.	Exceedance of the noise criteria was predicted after the application of mitigation measures, but only during adverse wind conditions and mostly in terms of the 'amenity' criteria. The modelling conservatively assumes that the site is operating at capacity and all plant is operating at full load over the entire night-time 9 hour assessment period. As this is unlikely to occur, then the typical operational scenarios have now been modelled. The results of these assessments are presented in the RT&A Technical Memo in Appendix F. In summary compliance is achieved with both the 'Intrusiveness' and the 'Amenity' PSNLs under calm and worst-case noise-enhancing wind scenarios, at all receivers with the exception of a few minor exceedances during adverse wind conditions of 1-2dB(A) at 3 locations and one 5 dB(A) exceedance under adverse wind from one specific direction. These results do not include further additional noise mitigation measures, such as those discussed in the RT&A Technical Memo, therefore, there is scope to further reduce noise emission levels from the operation of the site as part of the Detailed Design / EMP phase, when more specific details about the site and its operations are known, in order to comply with the PSNLs. After all additional reasonable and feasible measures are incorporated into the design at the Detailed Design /EMP phase (as set out in the RT&A Technical Memo in Appendix F), it is expected that the PSNLs will be achieved.
The DEC advises that the exceedances of the sleep disturbance screening criteria are significant. Current DEC guidelines recommended that where the screening criteria is exceeded that a more detailed analysis is required. The detailed analysis should cover the maximum noise level or $L_{A1,(1minute)}$, the extent that the maximum noise level exceeds the background level and the number of times this happens in the night period. Some guidance on possible impact is contained in the review of research results in the appendices to the Governments Environmental Criteria for Road Traffic Noise (ECRTN). Other factors that may be important in assessing the extent of impacts on sleep include: • how often high noise events will occur; • time of day (sleep disturbance is normally taken to occur between 10pm and 7am);	The DEC's sleep arousal criterion is currently being reviewed, as the general opinion is that this criterion is conservatively low. For the NIA, guidance was taken from the EPA's ENCM, which provides a conservative criterion, and the ECRTN, which sets a suitable criterion which will ensure that 90% of the population (including the aged) are protected in their sleep, based on recent research. However, it is understood that the current DEC position is that an initial screening test should be carried out to determine whether instantaneous noise sources at night comply with the criteria established in the ECRTN. If noise levels are found to exceed, more detailed analysis is required to determine the extent of potential disturbance to sleep, based on the number of events, timing of events etc. It is unlikely that this level of detail can be provided at this early stage of the project. This matter would be better

• whether there are times of day when there is a clear change in the noise environment (such as during early morning shoulder periods). The NIA concludes that "under calm and isothermal conditions the levels remain below 65dB(A), which is considered to be the level that could cause arousal based on more recent research...". The reference to 65dB(A) comes from the Environmental Criteria for Road Traffic Noise (ECRTN) Appendix B which presents the results of limited studies regarding awakening reactions. The research suggests that maximum internal levels not exceeding 50-55dB(A) are unlikely to cause awakening reactions. It is generally postulated that a 10dB transmission loss occurs between a typical residential facade with windows open to allow minimum Building Code of Australia ventilation requirements, hence the reference to an external level of 65dB(A). Whilst the material in Appendix B to the ECRTN may be used as part of an assessment of sleep disturbance impacts, it should not be relied upon as being capable of informing an objective criteria. Other factors such as the number of times the maximum noise levels events are likely to occur during the night time period and the nature and character of the noise needs to be considered.	addressed at the design stage as part of the EMP, when details of site operations are known. Notwithstanding this, a more detailed analysis of sleep disturbance issues is carried out and included in the RT&A Technical Memo (Appendix F), based on several assumptions.
Road Noise	
NSW Health notes that current road noise levels are already between 7 to 21dB above the criteria set in DEC Environmental Criteria for Road Traffic Noise. The predicted additional noise generated from this proposed development falls within the 2dB increase allowed under the DEC Environmental Criteria for Road Traffic Noise. Despite this compliance additional mitigative options should be pursued in view of the pre existing noise impacts experienced by affected residents. DEC indicates that Table 5.4 in the NIA indicates that predicted 2016 LAeq,15hr and LAeq,9hr noise levels, including ILC traffic, will not result in a greater than 2dB increase in existing traffic noise levels. It appears that the predicted 2016 LAeq period levels have also taken into account natural traffic growth (growth would occur regardless of the ILC), and hence the predicted levels are conservative. It would however be beneficial for the traffic noise increase associated solely with ILC traffic be reported. However, it should be noted that the traffic noise levels being experienced on Liverpool Road and Roberts Road significantly exceed the Roads and Traffic Authority's (RTA's) definition of acute traffic noise exposure (ie acute traffic noise levels are levels exceeding L.Aeq,15hr 65dB(A) and LAeq,9hr 60dB(A)). This should be considered in the context that one of the objectives of the ILC is to reduce acute traffic noise impacts in the area around Port Botany. The number of residences experiencing acute noise levels has not been identified. This is not a criticism of the NIA, as that level of assessment is not normally undertaken. However, given the government objective of reducing road traffic noise increases on roads surrounding Port Botany, it would seem logical to consider the extent of traffic noise impact in the vicinity of the proposed ILC in terms of exposure to acute noise levels.	The project is not responsible for existing road traffic noise levels. The contribution to traffic noise from this project is calculated to be in the order of 0 – 0.2dB(A) at residential receiver locations – refer to the RT&A Technical Memo (Appendix E). Such a small traffic noise increase is considered minor, insignificant and inconsequential. Furthermore, the NIA found that mitigation of existing noise, through the provision of noise barriers for residences is not possible as driveway access to roads is required. Therefore it would not reasonable and feasible to reduce traffic noise levels. The assessment carried out in the NIA, compares 2016 traffic noise levels (with ILC) to 2006 future-existing noise levels (without ILC). This type of assessment is considered to be more conservative than a direct comparison in 2016. Nonetheless, an assessment which compares traffic volumes for with and without ILC (ie natural growth only) is attached in the RT&A Technical Memo (in Appendix F). It is agreed that this is not usually required as part of this sort of assessment, but it could be considered during the DD/EMP phase. That is, the number of residences exposed to acute noise levels (with/without ILC) will be identified more accurately during the Detailed Design /EMP phase. These will be identified and appropriate consultation / mitigation strategies put into place to work with the residents to minimise impacts.
Cumulative	
It is important that cumulative predicated impact of road and rail be added to the predicted operational impacts to determine a more accurate prediction of noise impacts. We	Cumulative noise impacts have been considered to the extent that NSW noise policy allows, through the application of the amenity criteria. It is noted that in NSW road, rail and

note that cumulative impacts of road and operational noise may be significant to the northwest of the proposal (residences located between Norfolk Road, Hume Highway, Roberts Road and Waterloo Road). Cumulative rail and operational noise impacts may be significant to the southeast of the proposal (residences located in the vicinity of Bazentin Road, Belfield).	industrial noise are assessed to their own separate criteria, as different types of noise are perceived differently in the community. There are currently no overall criteria that address total environmental noise.

Vibration was addressed in the EA. The types of activities carried out on site during both construction and operation are unlikely to cause significant ground vibration beyond 25 m from the source. Given that the nearest potentially affected premises to the ILC are more than 50 m away, it is unlikely that ground vibration will be an issue on this site.

There will be no substantial change in truck traffic volumes on any road near residential areas. Therefore, there will be no change in existing vibration conditions due to traffic.

3.4.4 Air Quality

Issue Summary

Concern was expressed by the community over, amongst other things, the impacts of dust during construction, general air pollution caused by an increase in trucks in the area and the effects of diesel operations on the site and on the rail line.

DEC and NSW Health addressed construction and operational air quality issues in some detail. Given the indication of exceedance of PM_{10} criteria during construction and the potential for it during operation, DEC noted that a further developed mitigation strategy appears necessary to prevent impacts from both construction and operation activities. DEC recommended that a revised air quality impact assessment that demonstrates compliance to appropriate criteria should be developed in parallel (or iteratively) with:

- development of more detailed construction and operation air quality management plans;
- Development of a refined air quality impact mitigation strategy to prevent impacts; and
- All technical issues (including impacts from off site activities) being addressed through additional assessment work.

In particular, DEC considers that further assessment work is required to develop a final suite of mitigation actions that will ensure that appropriate air quality outcomes are achieved during the construction phase. Importantly, it indicates predictions of 1 to 27 days annually in excess of 24-hour PM_{10} criteria (with and without mitigation in place) required refined modelling approaches, greater refinement of modelling assumptions or a revision of operation and construction plans or a revision of the mitigation strategy, or all of these.

Response

In terms of the issue of construction dust raised by the agencies and the community, the EA clearly identified that despite some exceedances of the criteria used, the dust generated by the proposed construction works would be able to be managed adequately. A detailed Dust Management Plan will be

developed before construction begins. With the benefits of better knowledge of the construction schedules and methodologies, the DMP will provide more detailed mitigation measures to manage the dust levels so that the criteria are not exceeded. This would include real time monitoring of dust levels and a response process to manage them.

Our response to DEC's specific comments on construction dust and the choice of air quality criterion is provided below.

For the PM_{10} air quality assessment (both construction and operational) we used the NEPM criteria of 50 ug/m^3 (24 hour) with 5 exceedances allowed rather than the DEC criteria of 50 ug/m^3 with no exceedances allowed. The DEC criteria are considered too stringent for assessment of construction phase PM_{10} when existing air quality is taken into account. As a demonstration of this the background air quality data for Lidcombe, which was used for modelling purposes and is shown in the attached memo (Appendix G), provides the the highest background PM_{10} (24 hour) approaching 40 ug/m^3. In modelling PM_{10} impacts it can be seen that an impact from construction greater than 10 ug/m^3 could result in a single exceedance of this criteria. An allowance of 5 exceedances per year is considered more reasonable and workable, particularly in light of the fact that in many other jurisdictions eg. US and Qld (within Australia) far less stringent criteria are applied, eg. 150 ug/m^3.

The PM_{10} modelling methodology for construction phase impacts is considered reasonable, whereby initially the modelling was undertaken with no dust controls measures in place, and as expected impacts showed exceedance of the relevant criteria. Various dust control measures were progressively implemented until a level of control was achieved that showed impacts could be effectively managed. These controls included sealing of some surfaces that would be otherwise left unsealed, high level watering of the site and wind speed and wind direction restrictions, which may be required. In reality dust impacts will be managed by various means, including the physical controls assumed in the modelling and a sophisticated real-time PM_{10} monitoring program which will advise the construction contractor of any dust impacts within sensitive receiver locations should these occur. The contractor can then (almost immediately) alter construction works which may include restriction of works at certain locations in certain wind conditions such that impacts are effectively managed, without any exceedance of the relevant criteria. A protocol will be devised to determine the appropriate response to readings greater than 50 ug/m^3.

The PM_{10} criteria of 50 ug/m^3 (24 hour) is a very stringent criteria and generally as PM_{10} levels approach the criteria value there would be not perceived deterioration in air quality that would enable an operator to pro-actively implement controls to mitigate impact. It is noted, however, that the PM_{10} criteria is a 24 hour criteria and site operators will have instant access to real-time PM_{10} data under the monitoring program proposed. As such, as instantaneous PM_{10} levels reach some pre-determined threshold value, control measures can be implemented and total PM_{10} impacts within the 24 hour period can be mitigated so that the criteria is achieved.

In considering DEC's comments on operational impacts, the PM_{10} criteria of 50 ug/m3 (24 hour) is not exceeded by worst-case impacts (background + impact levels) on any occasion (nil exceedance) within

residential areas surrounding the ILC. This is shown in Table 7-7 and Figure 5 of Appendix F of the EA (Air Quality Study).

The issue of locomotive emission factors was raised. With respect to the on-site equipment the US EPA provided the only available set of "robust" emission factors for the type of equipment proposed, and Tier 3 best coincided with the likely year when this equipment would be required at Enfield. It should be noted in terms of NO_2 the predicted operational phase impacts (on-site equipment / trucks / trains) are well below DEC 1-hour and annual criteria, at most 77 % of the 1-hour criteria, for the worst-case including background levels. In the case of PM_{10} where impacts are only marginally less than the 24-hour criteria it should be noted that there is no difference in particulate emission factors for Tier 0, 1, 2 and 3 equipment, for the relevant engine sizes considered in the assessment.

At a meeting with the DEC comment was also made with respect to locomotive emission factors in particular the sulphur content of diesel, in so far as how this would impact on particulate emissions. The locomotive emission factors were taken from NPI, 1999 and controls applied as per USEPA420-F-97-051. The quoted diesel sulphur content in NPI, 1999 is 0.18 % which is less than the percent which will be used by locomotive diesel engine at the time the ILC becomes operational. Hence, the sulphur content data used is considered conservative in terms of both calculation of particulate emissions and SO_2.

The potential for road traffic air quality impacts was clearly identified in the EA and the impacts were assessed as negligible.

3.4.5 Rail Operation

Issue Summary

A number of submissions noted that the Environmental Assessment does not include any information on the environmental impacts from the increase in train numbers on the freight line as a result of this proposal and the ongoing expansion of Port Botany.

Marrickville Council indicated that matters relating to rail nose and vibration (on the freight train line between Port Botany and Enfield) have not been properly addressed. It was considered unacceptable that neither the Environmental Assessment for the proposed Enfield Intermodal Logistics Centre, nor the Port Botany Expansion EIS, has undertaken a full and accurate assessment of the noise and vibration impact of freight rail trains (moving between both facilities) upon dwellings located in the Marrickville LGA. Rather than conducting any original assessment of the impact of freight rail noise and vibration upon dwellings in the Marrickville local government area (LGA), the Environmental Assessment simply makes reference to the assessment contained in the Port Botany Expansion EIS of early 2004. Marrickville Council has serious concerns regarding the methodology which Sydney Ports Corporation has used (with regards to both the expansion of Port Botany and the proposed Intermodal terminal at Enfield) in regards to the impact of rail noise and vibration. Due to these serious and ongoing concerns, Marrickville Council requested that the current Intermodal Logistics Centre proposal not be approved - until such time as Sydney Ports Corporation has conducted a full and accurate assessment of the noise and vibration impact that freight trains (including the additional trains as a result of an expanded Port

Botany and an intermodal terminal at the Enfield marshalling yards site) travelling between Port Botany and Enfield would have upon dwellings in the Marrickville local government area - with the assessment making commitments in regards to consultation with affected residents, and the installation of noise mitigation works which would result in compliance with Environmental Protection Authority rail noise criteria.

Similar comments were offered regarding problems associated with old and inefficient locomotives using the freight line, and the potential impacts on air quality due to this increased level of emissions.

The DEC'S position on the rail noise assessment for the Botany Goods Line is that no holistic and well informed analysis of the potential noise impacts arising from the Governments Policy of increasing rail modal share of port related traffic has been undertaken. More importantly, the responsibility and commitment to an assessment, and where necessary noise mitigation, is not clear.

The DEC also emphasises that the EA has not explored the extent to which the use of best- practice rolling stock could be used to reduce the rail-related impacts both at the ILC and along the rail corridor between the ILC and Port Botany. It is the DEC's experience that valuable reductions in noise can be achieved through the use of modern rolling stock. It is noteworthy that the EA assumes a class of locomotives for shunting that have typically been in service for 35 to 40 years and a class of mainline locomotives that have typically been in service for 20 to 25 years. The DEC indicated that options for best-practice rolling stock that could be considered for the ILC include:

- modern locomotives that achieve the current locomotive noise criteria;
- multi-pack container wagons, to reduce the extent of noise generated by stretching and bunching of the train;
- ECP braking technology to allow for smoother braking; and
- the use of hybrid locomotives for shunting.

The DEC considers it would be appropriate to further assess the feasibility and reasonableness of using best-practice rolling stock to deliver improved noise outcomes, particularly given the extent of exceedances of PSNL and the current high levels of rail noise along the Botany to ILC rail corridor.

Responses

The EA outlined that, if the NSW Government policy that 40% of containers to and from Port Botany are to be carried by rail by 2011, the number of freight trains using the dedicated line from Port Botany would increase significantly beyond current levels, regardless of whether the ILC at Enfield is developed or not. The proposed ILC would not be generating more freight trains along the line. Rather, it would provide a loading / unloading point for some freight trains that are expected on and must use that line. The management and regulation of noise and vibration issues on the freight line is a matter for RailCorp (the current Environment Protection Licence (EPL) holder), the likely future EPL holder (ARTC) and the regulator of the licence (Department of Environment and Conservation (DEC)).

The operation of the rail transport of freight to and from Enfield falls within the existing operating licences for the freight line. Impacts were discussed in Chapter 8 of the EA, and no further assessment is considered to be required.

However, it is noted in the DEC's comment on the rail noise assessment for the Botany Goods Line that no holistic and well informed analysis of the potential noise impacts arising from the NSW Governments aim of increasing the rail modal share of port related traffic has been undertaken. As a consequence the responsibility and commitment to an assessment, and the necessity for the application of feasible noise mitigation measures, is not clear.

Sydney Ports acknowledges DEC's concern, and in response to this Sydney Ports is prepared to participate in any interagency working group established to address rail noise impacts along the dedicated freight line. It should be noted that Sydney Ports, as a condition of consent for the Port Botany Expansion project, will establish a Rail Noise Working Group to address rail noise issues along the Freight Line between Enfield and Botany Yard. This group includes Sydney Ports, RailCorp, DoP, ARTC and relevant councils and community members. Consultation with relevant regulatory authorities including DEC would also be undertaken.

3.4.6 Pollution (Light Spill)

Issue Summary

A number of submissions focused on the effects of pollution on the amenity and health of residents. These included:

- The effects of air, noise, vibration and lights from the increased numbers of trucks on main roads and other roads;
- The effects of noise from rail operations; and
- The impacts of light spill on the residents near the site.

Air, noise and vibration are addressed elsewhere. Light spill is addressed below.

Response

The effects of light spill were investigated in the EA (Chapter 16) and the Appendix I – Visual Assessment. The impacts of light spill were investigated to determine, in particular, the impacts at night. A preliminary lighting concept was developed for the purposes of modelling light spill. This concept comprised:

- Light poles spaced 80 m apart in the empty container and intermodal terminal areas, with fittings placed 25 m high;
- Illuminance levels set for safe operating procedures on the site; and
- Configuration of lights to direct onto the site and obtain minimum spillage into surrounding areas.

Light spill was modelled from the empty container areas at the northern and southern ends of the site as these would be the closest parts of the ILC to residences. Modelling results were compared against the

relevant standard *AS4282 – Control of Obtrusive Effects of Outdoor Lighting* recommended maximum obtrusive light levels. Recommended illuminance limits are strictest during "curfewed hours" (11pm and 6am). These are 4 lux at the boundary of commercial and residential areas, 2 lux within residential areas described as "light surrounds" and 1 lux in residential areas described as "dark surrounds".

Light spill (illuminance) levels were modelled in the vicinity of several of the nearest residences. The modelled light spill levels of 0.02, 0.01, 0.01, 0.02, and 0.00 lux are all considerably lower than the strictest of the limits listed in AS 4282, the light modelling indicating that the proposed lighting would be successful in containing light within the site. The light levels predicted at the nearest residential levels would be virtually imperceptible to people in those areas. The modelling showed that anywhere beyond approximately 140m from the site boundary would be subject to no measurable light spill.

AS 4282 also includes recommended limits for "luminous intensity" which relate to direct views of lights. The assessment of direct views of lights in the light spill assessment was undertaken qualitatively. Light fittings would be visible at night from most of the key viewpoints assessed. However, these would not be expected to change the night landscape as the lights would be focussed downwards and would be part of a landscape already containing a large number of light sources. It is unlikely given the downward focus of the proposed lighting, that direct views of lights would be regarded as obtrusive.

3.4.7 Socio-economic and Amenity

Issue Summary

Although acknowledging the economic importance of NSW of being able to cater for an expected increase in containerized trade over the coming decades, many respondents were particularly concerned about the wider environmental and health impacts of vastly increasing the movement of freight in the region.

Many comments were received arguing that the site is completely unsuitable for such a facility, given its proximity residential areas and the adverse community and environmental impacts the redevelopment would create. It was suggested that there would be effects on the community, the environment and the roads. Dramatic increases in the number of trucks going along our roads and rail to and from the site as under the proposal will result in more traffic, more pollution, more noise, increased risk of road accidents and increased health risks.

Disruption to existing businesses during the construction phase was indicated and it was suggested some means of mitigating that disruption and the consequent loss of business needs to be considered either by way of condition or by State Government compensation. Additionally, there was concern about the future of local businesses once site operations commence, especially along the northern end of Cosgrove Rd and in Norfolk Rd east, all of which are heavily dependent upon on-street parking, should a future local area traffic management plan ban on street parking.

It was suggested that, given the demographic profile of Strathfield residents, it is unlikely that a great many job opportunities will be opened up by the presence of an intermodal terminal for locals. Further, employment is more likely to be of a "relocational nature" than new jobs created.

Response

The local government areas of Strathfield, Bankstown and Canterbury support a growing population which is ethnically diverse. These councils maintain a range of schools and community facilities within the local area, although none will be directly affected by the proposal.

The consequences of the development on air quality, noise and traffic operations (roads) are addressed elsewhere in detail in the EA and in this report. The EA Chapter 17 summarised the social impacts which may result from the proposal.

Noise resulting from the 24 hour site operations concerned many residents, and 'sleep arousal' was considered in the noise investigations. Instantaneous noise generated by industrial noise sources would be managed so as not to exceed the sleep arousal criteria at residences once all reasonable and feasible noise mitigation measures had been implemented, in accordance with the EMP.

It was noted that noise from site operations and truck movements could potentially affect areas in close proximity to the site, generally residences and industrial properties along Cosgrove Road and residential properties on the western side of Roberts Road. Noise during the operational stage would be managed through an Environmental Management Plan that would focus on noise reduction at source and the use of acoustic barriers. Further discussion is provided in the RT&A technical memorandum (Appendix F).

The traffic assessment found that there would be no significant impact generated by heavy vehicles using the ILC and that this traffic would use arterial and state roads to minimise noise impacts on local residents.

Air quality studies have shown that there will be no exceedances of air quality guidelines from vehicles visiting the site, vehicles used on the site or locomotives during operation. The surface of the proposed ILC is to be sealed, limiting opportunities for dust creation during operation. Modelling undertaken as part of this assessment identified that impacts in terms of particulate matter are considered insignificant. Furthermore, the studies demonstrate that increased vehicle movements on classified roads surrounding the proposed ILC site, which may experience increases and/or decreases in vehicle traffic as a result of the project, will not affect overall air quality in the area.

The consultation processes have identified community concerns regarding air quality, noise and risk of accidents which may have an impact on health. These issues have been reviewed in technical studies to identify the likely impacts and to develop management or mitigation measures. Concerns about the potential risks, real or perceived, could impact on health through anxiety or stress. The potential for psychological health impacts varies from individual to individual.

Stress and anxiety associated with perceived risks can be reduced through communication with the community to inform individuals about the management measures employed to minimise risks and to provide opportunities for feedback.

A key benefit provided by the proposed ILC site for the community is the employment opportunities it creates during both the construction and operation phases and the potential for stimulating commercial and light industrial activities within the surrounding industrial area.

3.4.8 Property Values

Issues Summary

Members of the community raised concerns that the development of the proposed ILC would have negative implications for property values.

Response

Property values over Sydney as a whole have been increasing and given the limited impacts associated with the proposal there are no reasons why the proposal would affect local property prices.

The site is in a derelict state and has not been extensively used since marshalling yard activities ceased. The surrounding area is also predominantly industrial and a more active industrial appearance on the proposed ILC site may be of some concern to local residents. In terms of impacts on visual amenity, visual analysis of the site identified that there would be limited views from the surrounding residential streets. As such the proposed ILC would have a low visual impact due to the long viewing distances. Noise mounds along the eastern boundary of the site would limit views from industrial premises along Cosgrove Road with visual improvements for residents in the southern end provided by the Community and Ecological Area. Landscaping would reduce visual impacts from the noise mounds.

Redevelopment of the site has the potential to encourage businesses associated with freight movement and intermodal activities into the surrounding industrial area. This may result in an increase in the number of operations associated with freight storage and handling and the potential replacement of unrelated businesses. A positive land use outcome is likely to result through encouragement of ‘clean’ development such as freight handling facilities.

3.4.9 Land Use

Issue Summary

Many submissions argued that the site is completely unsuitable for an intermodal facility given its proximity residential areas and the adverse community and environmental impacts the redevelopment would create.

Responses

The land is zoned for railway purposes and the surrounding area is predominantly industrial. Access from the site to the main road network is through industrial lands and impacts on residential areas will

be negligible. A series of mitigation and management measures are proposed to ensure that operation of the site will have a minimal impact on sensitive receivers.

3.4.10 Consultation Process

Issue Summary

The major issues raised by the community were:

- Residents were not consulted or informed adequately by Sydney Ports Corporation about the proposal. It was suggested that, during consultation with local residents, the community consultation information detailed in the Environmental Assessment had not been distributed;
- No effort has been made to make the information accessible in different languages. Given the cultural background of the local community and the high population of non-English speaking residents, this was regarded as of major concern; and
- There was a lack of adequate community or council consultation prior to the release of the EA during the summer holidays when the community was otherwise engaged.

Response

Community consultation process involved 1800 number, email, fax and address for any contact and questions throughout EA development process. A regularly updated web site also provided information about the project, the development process and the way by which the community could have its say.

Two community days were held - one in May 2005 to outline process of assessment and seek views from residents and groups, and a second in February 2006 during the exhibition of the EA.

Council briefings were held for Strathfield, Bankstown, Canterbury, Burwood and Marrickville at the beginning of the process and during the exhibition of the EA. Briefings were offered to a number of community groups. These were accepted by NOPE and the South West Environment Centre.

Three newsletters were widely distributed in the area, by direct mail distribution to about 11,000 households, via Councils and mailed to a database of business owners, community groups ands residents. The newsletters were distributed in March and June 2005 and in January 2006.

Advertisements concerning the open day were placed in local papers, including community language papers - Arabic, Vietnamese and Chinese. Interpreter facilities were offered and promoted in all communication material.

The exhibition period was decided and controlled by the Department of Planning. It lasted from 9 January to 20 February 2006, taking into account the holiday period, and accordingly was longer than the statutory period required under the Environmental Planning and Assessment Regulation.

Sydney Ports will continue to consult with the community during construction and operation of the ILC, should it be approved. It will provide for Community Liaison Groups throughout the construction and operation of the ILC, as part of this continued consultative process.

3.4.11 Community and Ecological Area

Issue Summary

Strathfield Council indicated the ecological area provides an opportunity to provide secure habitat for the Green and Golden Bell Frog if it is appropriately designed and linked into a network of habitat in Greenacre. The proposed Community and Ecological Area is a worthwhile concept and should be vested in Council ownership as Community land so it may be open to the general public with the exception of ecologically sensitive areas. The land should be protected with appropriate caveats on title and open space and environmental protection land zonings.

A detailed Landscape design of the Proposed Community and Ecological Area needs to be completed with input from Council. Considering the size and impact of this proposed development it is requested that the following contributions be made to the local community:

- the ownership of the proposed Community/Ecological Area is handed over to Council; and
- Sydney Ports contribute to the full cost of the ongoing maintenance of this facility.

Responses

SPC will consult with DEC and Strathfield Council over the management of the Frog Habitat Area. Opportunities for future ownership, land use zoning and management will be determined at a later date.

Landscape design and species planting would be prepared as part of the detailed design process. Species selected for the site would be endemic to the area and sourced from local provenance. SPC will consult Strathfield Council during the preparation of the detailed Landscape Plan.

3.4.12 Flora and Fauna

Issue Summary

Strathfield Council notes that the ILC site contains marginal habitat for Green and Golden Bell Frogs. They state that, although true, each individual lot in Greenacre contains marginal habitat. It is the combination of these sites that provides the total habitat. As such it is not appropriate to consider the site in isolation, but rather as a key component of a series of fragmented habitats that when considered together make up the total habitat. The Green and Golden Bell-frog recovery plan identifies this population as one of only 8 key populations in Sydney.

It is further stated that no baseline information is provided in the EA on the total population of Greenacre Bell Frogs and as such the overall goal or carrying capacity of the Ecological area is unknown. This needs to be coordinated and established between Sydney Ports, the Department of Environment and Conservation and Strathfield Council. Such consideration will assist in determining the balance between habitat and community functions in the ecological/community use area.

Responses

The Frog Management Plan will be prepared in consultation with DEC and Strathfield Council. Connectivity between frog habitats would be a key consideration when designing the Frog Habitat Area. It will be constructed according to the detailed design prepared, which would take into consideration the

carrying capacity and the area would be managed according to the Frog Management Plan. Monitoring of the Frog Habitat Area will be undertaken to ensure it is functioning as designed.

3.4.13 Site Soil Contamination

Issue Summary

Strathfield Council and DEC but refer to the need for a Remediation Action Plan (RAP) to be prepared prior to remediation work commencing. This should be prepared in accordance with DEC guidelines, SEPP 55 and the *Contaminated Land Management Act 1997*. The RAP should include provisions for inspection and validation of soils beneath existing structures when they are removed and any hotspots that are uncovered during site development works. Following remediation, all exposed surfaces are to be validated to ensure that all TPH, asbestos and heavy metal contamination has been removed.

Further investigations are required to determine the significance and extent of contamination in certain areas, including the area west of Stockpile 4 in regards to elevated concentrations of arsenic that exceed the Open Space criteria, and the DELEC site in regards to TPH and copper concentrations.

Responses

A RAP is to be prepared and identified contamination to be remediated prior to earthworks commencing. Soils from beneath removed buildings would be visually inspected and testing undertaken if evidence of contamination is present or if the soils are observed to be different from the surrounding area.

Validation testing of remediated hotspots and all exposed surfaces is to be undertaken to ensure contaminant levels are below threshold levels defined within the RAP.

Further investigations are to be undertaken into the contamination hotspot (Arsenic) within the proposed Community and Ecological area to determine the significance and extent of the elevated levels prior to assessing remediation options. The copper and TPH hotspots identified in the remainder of the site are to be remediated through excavation and disposal (Copper) and landfarming (TPH).

3.4.14 Site Design and Management

Issue Summary

Issues of site design and management require Sydney Ports to design the site according to relevant Council or State Government guidelines.

Responses

Chapter 5 of this report outline the requirement to prepare environmental management plans for both construction and site operation.

3.4.15 Drainage and Hydrology

Issue Summary

Strathfield Council and a number of community members indicated concern over the effects of the project on flooding within the Coxs Creek and Cooks River catchment, and issues associated with water quality downstream of the site.

Responses

The ILC site will not provide a solution for existing stormwater problems external to the site, nor will they be studied in any detail. However, the basic principle that the development shall have no external impacts for the accepted ARI events will be applied. Flooding issues would be considered during preparation of hydrological and drainage plans as part of the detailed design phase.

Stormwater runoff management has been satisfactorily discussed in the EA. It will be addressed in detail during the detailed design phase. It should be noted that a detention basin would be constructed at the southern end of the site, immediately north of Coxs Creek. This would also be used to treat run off prior to discharge. The detention basin would be designed to ensure post development peak flows do not exceed pre-development peak flows. The performance of the basin system will be maintained by SPC.

Stormwater, runoff and management were addressed in the EA in Chapter 10. More detailed studies will be undertaken as part of the detailed design.

3.4.16 Heritage and Archaeology

Issues Summary

The Strathfield District Historical Society, Strathfield Council and the Heritage Office provided substantial submissions on heritage issues. Other comments were also received from community members. In its submission, Council indicated:

- The former Enfield Marshalling Yards site as a whole is of heritage significance in illustrating the history and former use of the site and a comprehensive development history and historical survey of the site is required before further demolition or relocation occurs;
- The surviving significant historic built elements which contribute to the historic legibility of the site should be preserved on site. For example, the Administration Building and Yard Masters Office should be retained and utilised as part of the site operations and the pillar water tank, gantry crane and pedestrian footbridge should be relocated to contextually appropriate locations within the site;
- The Tarpaulin factory is not well regarded by the nearby residents. It is feasible to relocate one or both sections of the former Tarpaulin Factory without substantial loss of significance, particularly as it is a reassembled building.

The Strathfield District Historical Society requested the retention and reuse of the Administration Building, the Yard Master's Office and Tarpaulin Factory on site.

The submission by the Heritage Office indicated:

- The Applicant should be asked to provide more information about the conservation and adaptive reuse of the two items of State significance (Tarpaulin Factory and Pillar Tank) on site, in particular the Tarpaulin Factory;
- The items of Local significance- namely the Pedestrian footbridge and Wagon Repair Shed should be ideally retained on site. Their contribution to the significance of the former Marshalling Yards as a whole should be taken into consideration. In this respect the applicant should be asked to explore alternative options to retain and adaptive reuse of these items within the site. The proposed Community and Ecological Area, for example, may be considered as an alternative location;
- The former Yard Master's Office has been assessed as having low heritage significance in the AHI because it has lost much of its heritage significance through the modifications to the building and removal of its significant elements. Given that this item has lost most of its original details the HO does not object to the demolition of the former Yard Master's Office. However full archival recording of this item or any other heritage item on the site that is to be demolished or relocated should be undertaken in accordance with the NSW HO guidelines. Removal to another site altogether should be considered as a last resort after considering all other options and if their retention on site is not possible because of the operation requirements of the ILC. If relocation of these items to a 'railway heritage organisation' is the only viable option, the applicant should be asked to explore possible locations and undertake necessary procedural steps with the relevant organisations before approval is given to the proposed development;
- The Applicant should be asked to prepare a heritage interpretation plan and strategy for the whole site prior to commencement of works. This should be prepared in consultation with Heritage Office and in accordance with Heritage Office guidelines. The approved interpretation plan shall be imparted at an appropriate location for public appreciation for example at the proposed community and ecological area;
- The report does not assess the impacts of the proposed development on the potential European archaeological relics on the site. The applicant should be asked to investigate the impact of the proposed development on the potential archaeological significance of the site. The assessment should be accompanied by an archaeological research design and appropriate mitigation techniques, and should be ideally undertaken prior to the issue of the consent as the findings of this assessment may result in some recommendations to the proposed design. It is requested that upon the result of these studies appropriate conditions regarding the prevention of the potential archaeological remains and their appropriate management should be included within the conditions of consent should approval be granted.

Response

Reuse or relocation options for the Tarpaulin Factory and Pillar water tank will be further investigated as part of the detailed design phase of the project. The Tarpaulin Factory will be stabilised against further deterioration and, in consultation with the Heritage Office and the community, options for its reuse at its present site will be investigated. Only if on-site reuse is found to be unachievable or unacceptable will consideration be given to its relocation off-site to a railway heritage museum or

demolition. The Pillar water tank will be subject to further work to repair it and choose and area for its relocation on-site. The relocation will be undertaken as early as practicable in the construction program.

Due to the nature of activities to occur on the site reuse of the Yard Master's Office is not possible. The Yard master's office cannot be reused on-site or realistically offered to a railway heritage organisation due to its brick structure. Full archival recording of the Yard Master's Office would be undertaken prior to demolition, according to Heritage Office guidelines. The footbridge is to be reused on site, if possible. Further studies will be undertaken prior to construction commencement, to determine the feasibility and location of this item.

Due to extensive termite damage in the wagon repair shed very few elements are fit for reuse. This will be evaluated and investigations undertaken to determine if some elements of this structure may be able to be reused on site. Reuse opportunities will be incorporated into the design. Reuse of part of the footbridge and elements of the wagon repair shed within the Community and Ecological Area would be considered during the detailed design stage, and relocation work undertaken during the construction phase of the project. If during the detailed design, it is established that reuse of heritage items on site is not an option, then the items would be offered to external heritage organisations.

A heritage interpretation plan and strategy for the entire site will be undertaken by Sydney Ports prior to construction works commencing on site. An archaeological assessment for indigenous and non-indigenous heritage was undertaken by Navin Officer in 2001. The report was referenced by Graham Brooks and Associates (Appendix H to the EA). The indigenous studies in the Navin Officer report were updated for this project, but no changes were warranted for the non-indigenous aspects of the report. This 2001 report will be provided to the Department of Planning.

The Navin Officer report concluded that, "given the picture of massive disturbance across the site, it is unlikely that significant archaeological deposits remain on the site. The only possibility is that some deposit may have been sealed under extant buildings or slab foundations. Even so, it is unlikely that such deposits have the potential to tell us more about this site or the construction of what are relatively well documented buildings". Limited archaeological testing is recommended for the area of the Wagon Repair Shed and the Yard Master's Office, and this will be undertaken.

4. Statement of Commitments

4.1 Introduction

The environmental impacts of the proposal have been assessed in the Environmental Assessment (EA) report and measures to manage those impacts were outlined in the form of a statement of commitments. These mitigation measures, along with any conditions of approval issued by the Minister for Planning, would be incorporated into the detailed design, as well as where appropriate, the preparation of construction and operational Environmental Management Plans (EMPs) and sub-plans for the project.

The following sections provide an updated statement of commitments, incorporating responses to comments from relevant Government agencies, Local Government and the community, as well as responses from the Independent Panel which has provided an assessment of the proposal.

Sydney Ports Corporation proposes to construct and operate the ILC at Enfield as described in Chapter 4 of the Environmental Assessment (EA) report, subject to the modifications described in Section 2.2 of this Preferred Project Report (PPR).

4.2 Construction Environmental Management and Mitigation

Environmental management commitments proposed during the construction phase are shown in **Table 4-1** below. These commitments include the preparation of a construction EMP (CEMP) which would be required prior to any construction activities commencing. The CEMP would detail operating conditions and temporary environmental protection measures to mitigate the impact of construction activities. Other commitments may form part of the terms of contract with the companies or consortium responsible for the project construction, or may be further assessed at the detailed design stage.

Table 4-1: Environmental Management Commitments – Design and Construction

Objective	Action
Environmental Management	
Manage hours of construction work to minimise impacts on the community	Proposed hours of construction are 7.00am – 6.00pm Monday to Saturday, with no work on Sundays or public holidays. SPC will seek to maintain these construction times as specified in the EA. However, an undertaking is provided, and will be written into the Noise Management Plan, that high noise operations will not be undertaken after 1pm on Saturdays. The construction EMP will outline protocols for notifying relevant authorities and local residents prior to any works occurring out of normal construction hours. Out of hours work will be required under certain circumstances e.g. to minimise impacts on active operational services (e.g. connection to live sewer, water and electrical services), to minimise impacts on existing traffic, to respond to emergencies, and unavoidable construction constraints (e.g. long concrete pours, overhead rail bridge construction).
Minimise impacts of ILC construction on amenity in surrounding areas	A Construction Environmental Management Plan (CEMP) would be prepared and implemented to guide construction activities as outlined below in the following areas: ■ Road Traffic & Transport ■ Air Quality ■ Works on RailCorp land ■ Soils & Contamination ■ Hydrology & Water Quality

Objective	Action
	■ Noise & Vibration ■ Heritage ■ Flora & Fauna ■ Landscape & Visual ■ Waste Management ■ Energy and Water ■ Consultation. All plans and strategies would be developed as part of the CEMP, in consultation with the relevant agencies.
Road Traffic and Transport	
Minimise impact of ILC construction traffic on surrounding road network	A Construction Traffic Management Plan (CTMP) will be prepared and implemented to: ■ Restrict heavy construction traffic to designated arterial routes using the mechanism of construction contracts; ■ Establish consultation procedures through the Traffic Working Group with the RTA and local councils for any proposed off site works.
Air Quality	
Minimise dust generation during construction	Develop and implement a Dust Management Plan (DMP) as part of the Construction EMP. The DMP would include the following mitigation measures and controls which were incorporated into the air quality modelling: ■ Undertake a dust monitoring program prior to commencement of earthworks and during construction works; ■ Undertake regular watering of active work areas, including stockpiles and loads of soil being transported, to reduce wind blown dust emissions; ■ Haulage trucks to use the sealed haul roads when transporting materials on and off site; ■ Construct wind breaks in appropriate zones to reduce wind erosion; ■ Minimise the area of disturbed / exposed land at any one time; ■ Establish real time dust monitoring sites at two locations on the site. These will operate for the duration of the construction program; ■ Assess construction works activity and modify as appropriate if real-time dust monitoring data indicates ambient air quality criteria are likely to be exceeded due to project earthworks activity; ■ Revegetate stockpiles or progressively landscape exposed areas and where material is to remain in situ for a long period of time. The DMP would include details of a dust-level monitoring program undertaken prior to the commencement of earthworks to establish a background level and during construction works. In addition, monitoring at sensitive receivers would be undertaken during construction on a daily basis, to determine if earthworks contribute PM_{10} levels over and above the predetermined background levels.
Works on RailCorp lands	
Design and construct works according to RailCorp requirements	The design and construction methods for the northern acoustic wall, road overbridge and other rail infrastructure on RailCorp land will be submitted to RailCorp for its approval. The relocation of RailCorp's electrical, signalling and communications and other utilities infrastructure will be submitted to RailCorp for its approval.
Soils and Contamination	
Remediate contaminated soils	A remediation action plan consistent with relevant statutory and policy requirements is to be prepared and implemented prior to earthworks commencing. The strategy will involve: ■ Land farming of Total Petroleum Hydrocarbon (TPH) contaminated soils and further assessment of risk of off-site TPH mitigation; ■ Removal of asbestos and heavy metal contaminated soils, including

Objective	Action
	contaminated soils in the Community and Ecological Area; ■ Materials to be removed from site by an appropriately licensed waste handler and disposed of to a suitably licensed facility; and ■ Trucks to be appropriately covered to prevent release of materials en route. Contamination risks during site works would be assessed and where there is a risk of contamination exposure or mobilisation, appropriate measures would be taken. Validation testing of final exposed surfaces and remediated areas will be undertaken in accordance with DEC guidelines. Notification will be provided to Council as required under SEPP 55 for remediation works undertaken on the site.
Hydrology and Water Quality	
No increased sedimentation of nearby waterways	A Soil and Water Management Plan (SWMP) will be prepared and implemented to reduce the potential water quality impacts from the site during construction. General measures to control erosion of soil and sedimentation would be implemented prior to construction works. These measures would be prepared in accordance with the principles and practices in *Soils and Construction* (Landcom, 2004) and would be maintained and monitored during the construction phase.
Noise and Vibration	
Minimise construction noise impact on surrounding residences	An Environmental Noise Management Plan (ENMP) would be prepared and implemented prior to the commencement of works to achieve compliance with DEC criteria where reasonable and feasible. This Plan would include: ■ Application of physical noise controls to construction equipment, equipment maintenance and utilising “best practice” technology to achieve low levels of construction noise emissions; ■ Noise compliance monitoring for all major equipment and activities on site; ■ Erection of temporary noise attenuation barriers where necessary and practicable; ■ Construction of noise barriers/acoustic mounds as appropriate for the location and type of construction activities as early as practicable in the program; ■ The planning of noisy activities for parts of the day when they would have the least impact; ■ Communication between the community and the construction management to be provided at the start of the works and maintained during the works. This will include a 24 hour complaints handling system and advice to the community prior to undertaking any out-of-hours work; ■ Investigative monitoring of noise in response to specific complaints.
Heritage	
Management of heritage items	Reuse and relocation options for the Tarpaulin Factory and Pillar water tank will be further investigated. The Tarpaulin Factory will be stabilised against further deterioration and, in consultation with the Heritage Office and the community, options for its reuse at its present site will be investigated. Only if on-site reuse is found to be unachievable or unacceptable will consideration be given to its relocation off-site to a railway heritage museum or demolition. If demolished, the tarpaulin Factory will be archivally recorded. The Pillar water tank will be subject to further work to repair it and choose an area for its relocation on-site. Full archival recording of the Yard Master’s office will be undertaken prior to demolition, according to Heritage Office guidelines.

Objective	Action
Determine the presence of archaeological sites (non indigenous)	Reuse of part of the footbridge and elements of the wagon repair shed within the Community and Ecological Area will be considered and relocation undertaken. If it is established that reuse of these items on site is not an option, then the items will be offered to external heritage organisations. A heritage interpretation plan and strategy for the entire site will be undertaken prior to construction works commencing on site. Prior to relocation or demolition of any structures listed for relocation or demolition, those structures will be appropriately recorded and the recording reports lodged with the Local Studies Collection of Strathfield Public Library. Limited archaeological testing was recommended for the area of the Wagon Repair Shed and the Yard Master's Office. This will be undertaken according to Heritage Office Guidelines during demolition of the structures.
Protection of Indigenous Heritage relics if uncovered	In the unlikely event that artefacts of indigenous heritage significance are uncovered during the course of construction, works in the immediate area would cease, DEC would be notified and expert advice would be sought from an appropriately qualified professional.
Flora and Fauna	
Provide secure habitat for the Green and Golden bell Frog	A Frog Habitat Area is proposed to be constructed as part of the Community and Ecological area at the southern part of the site. The area will be designed by qualified personnel and will comprise ponds, foraging and shelter habitat. Frog movement corridors would also be identified to link the new habitat areas with existing frog habitat areas offsite.
Minimise likelihood of direct impacts to threatened species	During site works existing areas of potential frog habitat would be checked and any frogs found removed prior to works commencing. Frog exclusion fences will be provided during construction in areas where there is potential for frog activity.
Landscape and Visual	
Improve and manage landscaping	A Landscape Management Plan (LMP) will be prepared during detailed design of the project and implemented during and after the construction period. The plan would include: ■ processes for the management of the on-site weeds; ■ detail on the rehabilitation of the site with a program of weed removal and revegetation with native species. Noxious weeds at the ILC site would be identified and be removed in accordance to the criteria under the *Noxious Weeds Act 1993*, and the relevant NSW Department of Primary Industries weed control guidelines; ■ Monitoring of vegetation to ensure it becomes established and to identify any further management requirements. Landscaping to be detailed and carried out in accordance with the concepts in the Landscape Masterplan.
Minimise visual impacts during construction	Landscaping and noise mounds would be installed in the early stages of construction to screen the site to a degree appropriate for the location and type of construction activities being carried out. Revegetation of these areas would be conducted as soon as practicable during the construction phases.
Waste Management	
Minimise waste generated and maximise re-use and recycling. Waste disposal to be undertaken when re-use and recycle is not possible	A Waste Management Plan (WMP) would be prepared and implemented. This would include: ■ Measures to minimise waste including the use of clean excavated material as fill for site levelling and road works, the re-use of excavated material not suitable for construction purposes for noise mounds or landscaping where practicable, and contaminated soils to be remediated and used on site where appropriate; ■ Investigate the use of recycled materials in concrete, roadbase, asphalt and other construction materials; ■ Waste for disposal would be removed by a licensed waste contractor and

Objective	Action
	disposed of at a licensed landfill facility; and ■ Quantities of waste produced/reuse/recycled and location of final disposal to be monitored.
Energy & Water	
Manage energy usage and water consumption	Energy and Water Management Strategies will be developed as part of CEMP. Suitable measures would be identified and implemented during the construction phase. Energy management measures could include: ■ Management and maintenance of equipment; ■ Programming of works; ■ Fuel usage control. Water management measures could include: ■ Reduce consumption; ■ Reuse of water where practicable.
Consultation	
Consultation with community and relevant agencies.	A Consultation Plan would be prepared and implemented. This will include: ■ Establishment of a Community Liaison Committee to deal with construction issues; ■ Establishment and maintenance of phone line/fax/website to provide opportunity for community input; ■ A specific component to involve NESB communities; ■ A complaints handling procedure to address and respond to issues raised by the community, including investigative monitoring of construction traffic and noise in response to specific complaints; ■ Working with the ILC Traffic Working Group to implement Construction Traffic Management Plans. Liaison will occur with the community regarding the future use of Tarpaulin Factory and Community and Ecological Area. Should a viable future use of the Tarpaulin Factory not be determined once investigations have been made, the item shall be recorded and offered for relocation to a railway heritage organisation.

4.3 Operational Environmental Management and Mitigation

Mitigation and other environmental management measures identified in the EA and relevant to the operational phase of the project are summarised in **Table 4-2**. These include the preparation of a site Operational Environmental Management Plan (OEMP) which would be required prior to ILC operations commencing. The OEMP would detail on-going operating conditions and protection measures to mitigate the impact of site operations. Relevant measures would be detailed, as appropriate, in the relevant OEMP to be prepared by site tenants or lessees. Others may form part of the terms of contract with tenants or lessees, or may be further assessed at the detailed design stage.

In addition, tenants / lessees may be required to develop separate OEMPs for activities within leased areas. This would ensure that the environment is adequately protected during site operations and that adverse impacts are avoided or otherwise substantially ameliorated.

The OEMP would be updated as required to reflect any changes in the operation of the site or regulatory requirements.

- **Table 4-2: Environmental Management Measures – Operational**

Objective	Action
Environmental Management	
Minimise impact of ILC operations on surrounding area	An Operational Environmental Management Plan (OEMP) would be prepared and implemented to guide operational activities. It would include: ■ Environmental Management ■ Road Traffic & Transport ■ Air Quality ■ Chemicals storage and handling ■ Hydrology & Water Quality ■ Noise & Vibration ■ Heritage ■ Flora & Fauna ■ Landscape & Visual ■ Waste Management ■ Energy and Greenhouse ■ Water Consumption ■ Emergency Response ■ Rail Operations ■ Community Consultation ■ Environmental Reporting All plans and strategies would be developed in consultation with the relevant agencies. Sydney Ports would undertake a sustainability assessment of the operational aspects of the ILC to determine and develop appropriate strategies to minimise environmental impacts. These would be outlined in the OEMP.
General	The OEMP would provide for regular monitoring and periodic performance reviews of the key performance criteria for noise and traffic established for the operation of the ILC. Reviews will be undertaken when throughput reaches 100,000 TEU, 200,000TEU and at capacity. Noise and traffic performance parameters would be established in the OEMP. The examination and interpretation of results will be undertaken by a suitably qualified professional and any agreed actions implemented within a reasonable timeframe, as defined in the OEMP. Hours of operation are 24 hours per day, 7 days per week for the ILC site, comprising the Intermodal terminal, warehousing and empty container storage yards. Hours of operation for the Light Industrial and Commercial Area are 7:00am – 7.00pm, 7 days per week.
Road Traffic and Transport	
Minimise the impact of ILC operational traffic on the surrounding road network	An operational traffic management plan will be implemented to: ■ Ensure, to the satisfaction of the RTA, that the proportion of ILC heavy vehicles generated by the ILC does not unreasonably impact upon the Cosgrove Road/Hume Highway intersection during morning and afternoon peak periods. That is, prior to commencement of the ILC operations, SPC will provide a manual or technological solution to control the frequency of the ILC articulated and B double trucks during morning and afternoon peak periods; ■ As part of this solution daily log sheets for vehicle identification will be maintained. Advanced queue detector systems will be installed and an internal diversion plan developed to prevent any additional loading on

Objective	Action
	Cosgrove Road (it having reached an assigned unacceptable level at a designated location on that road). Alternatively, another recording arrangement acceptable to the RTA will be implemented. Upgrade works will be provided to the intersection of Roberts Road and Norfolk Road, following detailed design approval by the RTA. That is, prior to construction, the detailed design of the following upgrade works will be provided to the RTA for approval. The works will include: ■ Extending the Roberts Road northbound right turn bay to 150 metres; ■ Providing a southbound slip lane into Norfolk Road. (The slip lane length to be as long as possible); ■ Providing a diamond phasing operation on Norfolk Road to ensure right turn movements can be carried out in a controlled and safe environment; ■ Reconfiguring Norfolk Road east to provide a right turn bay of substantial length. In the new design right turn bays in Norfolk Road should face each other; ■ Provide three lanes for exiting traffic (including right turn bay) from Norfolk Road east by widening the intersection to the north; ■ Widening on Norfolk Road will require median island works on Roberts Road to achieve turning path on entry and exit to and from Norfolk Road; ■ It is noted that the on-street parking on the southern side of the eastern arm of Norfolk Road approaching Roberts Road detrimentally affects the efficiency of the intersection. The queued right turn movement and on-street parking prevent left turn vehicles from accessing the kerbside lane and are required to queue single file with right turning vehicles. In addition to widening the eastern arm of Norfolk Road, parking will be prohibited for a distance of 50 metres. The final design will meet RTA's Traffic Signal Design Standards and Principles. Potential traffic impacts from the ILC operations will be managed by: 1. Developing a site traffic management plan, incorporating a Heavy Vehicle Management Plan which demonstrates support for the newly introduced Compliance and Enforcement legislation, in consultation with the RTA. 2. Introducing Local Area Traffic Management measures to minimise impacts on local amenity through a multi-layered approach, including physical barriers, route restrictions (3 tonne limits) and penalties for transgressions, in consultation with Bankstown Council, Strathfield Council and the RTA.
Air Quality	
Minimise emissions from plant and equipment	Equipment to be maintained to ensure the best environmental performance in terms of air emissions.
Chemicals Storage & Handling	
Minimise risk of future contamination.	Operations to be managed to ensure potentially contaminating materials are stored and handled in an appropriate manner, according to relevant Australian Standards, to minimise future contamination risk to surface water, soils and groundwater. Where applicable the storage and handling will comply with, amongst other things: ■ AS 1940 2004: The Storage and Handling of Flammable and Combustible Liquids; and ■ AS 4452 1987: The Storage and Handling of Toxic Substances.
Minimise risk of on site incidents	The Intermodal Terminal operator will be required to prepare and implement operating procedures for the management of dangerous goods through the terminal. The management plan will address any load /unload procedures /precautions/priorities, storage areas, separation of different classes and in some cases separation from boundaries and other tenants/leased areas,

Objective	Action
	bunding/drainage/spillage containment, times on site, damaged or leaking containers, fire planning (pre-arrival notification, and pick up/removal by road vehicle from site or rail delivery to/from the port). Dangerous goods handling elsewhere on the site (eg. warehousing area) will be the subject of a future application and approval as the need arises.
Hydrology and Water Quality	
Manage potential flood effects	The proposal will result in no significant change in flood levels both upstream and downstream. This will be achieved by construction of detention basins which will reduce the post development peak outflow to a level less than or equal to that in the existing case. Two stormwater detention basins would be incorporated: ■ An approximately 33,450m^3 detention basin at the downstream end of catchment D, located at the southern end of the hardstand area; and ■ An approximately 2,000m^3 detention basin at the downstream end of catchment C, located on the eastern edge of the site. The precise size and location for these basins and whether they would be provided above or below ground would be determined at the detailed design stage. The detailed design of flood mitigation measures will be provided to RailCorp for its comment.
Manage water quality runoff to waterways	The key operational water quality measure and environmental safeguard will be the capture and treatment of the 'first flush' represented by the first 10mm of rainfall runoff. This runoff will be contained within a water quality detention basin that would be located adjacent to the proposed peak flow detention basin at the southern end of the site. In order to manage water quality impacts from the ILC site during the operation of the facility, the following treatment devices are proposed: ■ Stormwater treatment by medium filtration; and ■ Stormwater treatment by separation of sediments, oil and grease. Water quality management devices on site will be monitored and maintained at regular intervals to ensure they are functioning as expected. The on-site drainage system will be designed so that a chemical spill of up to 20,000 litres could be contained within the first flush containment basin.
Noise and Vibration	

Minimise operational noise impact on surrounding residences.	An Environmental Noise Management Plan (ENMP) would be prepared and implemented and would detail methods available to mitigate noise during the operation of the proposal. SPC commits to achieving Project Specific Noise Levels, as outlined in the EA, after the application of all feasible and reasonable mitigation measures. In particular the Plan will include:
	■ Time spent by locomotives idling at the northern end of the site would be reduced as much as possible;
	■ Mobile plant used on-site would be fitted with engine noise-reduction kits and variable reverse alarms or flashing lights;
	■ Treatment or location of fixed mechanical plant;
	■ Restriction of the use of public address systems at night;
	■ Noise barriers will be located at the following places:
	  ■ At the south-eastern boundary of the site within the vicinity of Cosgrove Road;
	  ■ At the north-western boundary of the site within the vicinity of Roberts Road; and
	  ■ Along Cosgrove Road behind the Commercial and Industrial area.
	The final height and length of the barriers would be determined during the detailed design stage of the development.
	If required further mitigation measures will be incorporated into the EMP

Objective	Action
Contribute to the management of rail noise in the existing freight corridor between Port Botany and Enfield.	following detailed design and assessment. These would include location of container stacking, construction of partial enclosures over noise generating areas and strategic placement of buildings on site to provide shielding. Other management measures would include: ■ Investigative monitoring of noise in response to specific complaints; ■ Appropriate complaints procedures and means of responding to complaints; ■ Training and educational programs for employees; ■ Review of night operations where any actions would not affect the feasibility of the site's operation; ■ Monitoring of noise levels on site to determine actual noise levels compared with PSNLs to address specific issues; and ■ Incorporation of all reasonable and feasible physical and management measures into the final EMP for the operation of the site. SPC will participate in any interagency working group established to address rail noise impacts along the dedicated rail freight line corridor.
Heritage	
Maintenance of items on site	Heritage items retained on site will be maintained according to the requirements of the NSW *Heritage Act, 1977*.
Flora and Fauna	
Maintenance of Frog Habitat Area	The Frog Habitat Area will be constructed according to the detailed design prepared, and would be managed according to an appropriate Frog Management Plan. Monitoring of the Frog Habitat Area will be undertaken to ensure it is functioning as designed.
Landscape and Visual	
Minimise impacts on residential amenity	Light fittings will be positioned downwards and screen planting will be strategically placed to minimise the chances of spill onto surrounding residences. Lighting on site will be designed to meet AS4282 Control of Obtrusive Effects of Outdoor Lighting. Consultation will be undertaken with rail corridor owners regarding their lighting requirements to ensure proposed lighting on site does not significantly affect adjacent rail operations.
Enhance community facility	Explore opportunities with local community groups for involvement of the community in managed access to the ecological and community area.
Waste Management	
Reduce the generation of waste	Ensure that initiatives for the sustainable management of waste are given due consideration. Such measures would include reduction of materials being brought onto the site, reuse of wastes where practicable and recycling. These measures would be developed as a result of undertaking the sustainability assessment during the detailed design phase of the project.
Energy & Greenhouse	
Reduce energy consumption and greenhouse gas generation	Opportunities to minimise energy consumption on site will be identified and implemented. Energy management measures would be assessed during detail design and would be consistent, as far as practicable, with Strathfield Council's DCP No 27 – Industrial Development. These measures would be developed as a result of undertaking the sustainability assessment during the detailed design phase of the project.

Objective	Action
Water Consumption	
Reduce consumption of water	Identify opportunities to minimise water consumption on site and potential re-use of rain water for toilet flushing, washdown bays and top up of frog ponds. These measures would be developed as a result of undertaking the sustainability assessment during the detailed design phase of the project.
Emergency Response	
Ensure emergency response procedures are adequate	An Emergency Response and Incident Management Plan (ERIMP) would be prepared to ensure incidents are handled promptly and safely. The ERIMP would outline the appropriate emergency response equipment that would be provided, the mandatory training requirements, the emergency response procedure and the responsibilities of site operators.
Rail Operations	
Ensure safe rail operations on site	The ILC's rail infrastructure and rail operations on site will be designed and implemented with systems and procedures in place to comply with statutory requirements for rail access and operational safety.
Consultation	
Effective consultation with the community	▪ Establishment of a Community Liaison Committee to deal with operational issues; ▪ Maintenance of phone line/fax/website to provide opportunity for community input; ▪ A complaints handling procedure to address and respond to issues raised by the community, including investigative monitoring of traffic and noise in response to specific complaints; ▪ Working with the ILC Traffic Working Group to implement Local Traffic Management Plans.
Environmental Reporting	
Provide clear and appropriate communication about site operations	During operation, environmental performance and progress will be incorporated as necessary into the respective corporate environmental reporting of Sydney Ports and the site operators. The reports would ensure relevant authorities have access to important environmental information relating to the new facility. Any shortcomings in environmental performance identified by the reporting process would be addressed by updating the EMPs.