MAJOR PROJECT ASSESSMENT: Intermodal Logistics Centre, Enfield

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

August 2007

Published August 2007
NSW Department of Planning
www.planning.nsw.gov.au

EXECUTIVE SUMMARY

Sydney Ports Corporation (the Proponent) proposes to construct an intermodal logistics centre at the former Enfield Marshalling Yards located to the west of Cosgrove Road and to the north of Punchbowl Road, South Strathfield. The Proponent then proposed to lease the site to private sector operators to provide the necessary services to operate the facility. The proposal includes the following works:

- demolition, relocation or removal of former railway buildings and structures;
- earthworks and drainage including the levelling of the site, formation of landscape mounds and detention basins and removal of unsuitable materials, as required;
- construction and operation of:
    - an intermodal terminal with a maximum capacity of 300,000 TEU (one TEU is equivalent to one twenty foot container) per annum for the loading and unloading of containers;
    - rail sidings, railway lines and associated works to connect to the existing freight line;
    - warehousing for the packing and unpacking of containers and the short-term storage of cargo;
    - empty container storage facilities, for the storage of empty containers to be later packed or transferred back to the port by rail;
    - light industrial/commercial area fronting Cosgrove Road;
    - access works including the construction of a road bridge over the new marshalling yards for access to Wentworth Street and an upgrade of the entrance to the site from Cosgrove Road; and
    - internal roads, administration buildings, diesel and LPG storage and fuelling facilities, container washdown area, vehicle maintenance shed, and installation of site services (all utilities, stormwater and sewerage).

The land proposed to be developed for the project includes Lots 2 and 3 DP 1006861, Lot 101 DP 1001498, Lots 14 and 15 DP 1007302, Lot 1 DP 950438 and railway land as denoted on Sheets 2 and 4 DP 242426. The site is generally bound to west by the New Enfield Marshalling Yard and existing industrial development, to the east by existing industrial development and by existing residential land to the north-west, south and south-east directions. The proposed project is subject to Part 3A of the Environmental Planning and Assessment Act 1979 and requires the approval of the Minister for Planning.

The capital cost of the proposed facility and associated works is estimated at $153 million (excluding acquisition which is estimated at $45 million). Approximately 170 people would be employed during construction and the project would generate employment for approximately 510 people during its operation. If approved, construction would take approximately 27 months.

The Minister for Planning, under section 75G(1)(a) of the *Environmental Planning and Assessment Act* 1979, directed that an Independent Hearing and Assessment Panel (the Panel) be constituted to assess certain aspects of the proposal. The Panel, made up of Ms Helen Weston (Chair), Mr Mathhew Stephens and Mr John Wassermann, was directed by the Minister for Planning to independently consider and advise on the following aspects of the proposed development:

1. Local and regional traffic implications
2. Residential amenity
3. Other issues raised in submissions to the exhibited Environmental Assessment and or to the Panel
4. Adequacy of proposed mitigation measures and the need for additional measures.

The Panel undertook a number of investigations and meetings with relevant stakeholders including members of the public regarding the proposed development and prepared a report for consideration by the Minister for Planning in his determination on the project. The Panel's recommendations have also been taken into account in the development of this assessment report.

A total of 330 submissions were received during the exhibition period with 92% of submissions objecting to the proposal. The key issues that were raised by the community included concern over increased traffic and rail use of the freight line leading to increased noise, air quality, community amenity and property impacts in the

surrounding areas. A large number of submissions also indicated that the proposal was not justified in terms of its location at the former Enfield Marshalling Yards and should, ideally, be located further west and closer to the centre of the market it is proposed to service. The Proponent's Environmental Assessment Report indicated that most of the potential impacts to the surrounding environment are capable of being ameliorated through various mitigation measures, although some noise impacts were still expected even with the implementation of mitigation measures. The Proponent has indicated that further mitigation measures would be considered during the detailed design phase.

The Department has undertaken its own assessment of the proposal based on a review of the Environmental Assessment Report, submissions received during the exhibition period, additional information provided by the Proponent as part of its Preferred Project Report, and discussions with the Panel. Both the Department's assessment and separate independent assessment undertaken by the Panel identified a number of questions regarding the assessment undertaken as part of the Environmental Assessment, particularly related to traffic, noise and air quality impact assessment. As a result of the Proponent updating its assessment by undertaking further analysis, assessment or providing clarification (as consolidated in the Preferred Project Report), a number of key issues raised in submissions have now been resolved or can be resolved through conditions.

On balance, the Department considers that the Enfield Logistics Centre can be approved subject to the effective implementation of the Proponent's Statement of Commitments and the Department's recommended conditions of approval.

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1. BACKGROUND

1.1 Location

Sydney Ports Corporation (the Proponent) proposes to construct and operate an Intermodal Logistics Centre (ILC) capable of receiving 300,000 TEU (one TEU is equivalent to one twenty foot container) of containerised freight per annum within the site of the former Enfield Marshalling Yards, South Strathfield. The site covers a total area of 60 hectares and is approximately 0.5 kilometres in width and over two kilometres in length. It is located approximately 15 kilometres by road from the Sydney central business district and approximately 18 kilometres by rail from Port Botany.

The site comprises three separate land parcels which are owned by the Proponent: Part Lot 2 DP 1006861 (the DELEC site and wheel lathe area), Lot 101 DP 1001498 (Australian Temporary Fencing Pty Ltd) and Lot 14 DP 1007302 (part of the former Enfield Marshalling Yards site including an area which is leased to Toll Holdings). In addition, the Proponent proposes to construct a noise wall, the northern rail connection, the southern rail connection and a road bridge on land owned by RailCorp (Lot 3, DP 1006861, Lot 15 DP 1007302, and Lot 1 DP 950428). The connection of the freight rail line is located on a small parcel of land owned by Strathfield Municipal Council (part DP 242426).

The location of the site in relation to Port Botany and the rail freight network is shown in Figure 1. The configuration of the site and its context to the surrounding area is shown in Figure 2.

1.2 Existing Site

The site of the former Enfield Marshalling Yards was initially developed in 1916 as a steam locomotive depot to support the Clyde Yard in Auburn which had reached its capacity. The Enfield yard's operation as a depot ended in 1993 and much of the site has remained vacant since that time. The western edge of the site was developed in 1996 as a new marshalling yard which is owned by RailCorp and operated by Pacific National. The Proponent considered the former marshalling yard site as a suitable location for the construction of an intermodal terminal and progressively purchased the remainder of the site between 2001 and 2003.

1.3 Previous Proposals

An Environmental Impact Statement (EIS) for a 500,000 TEU intermodal terminal on Sydney Port Corporation land was commenced in 2001. Director-General Requirements for the EIS were issued in October 2001 following a Planning Focus Meeting held in September 2001. The EIS was suspended in March 2002 when it was announced that the proposed intermodal terminal was to be subject to an independent review by the Hon Milton Morris AO. The Proponent revised its intermodal terminal proposal as a result of the Milton Morris review. The revised proposal forms the basis of the project the subject of this assessment report.

1.4 Surrounding Land Use

The site for the proposed project extends from the intersection of the Hume Highway and Roberts Road, South Strathfield in the north to the intersection of Cosgrove Road and Punchbowl Road, Enfield to the south. The western boundary of the site comprises the new Enfield Marshalling Yards and Wentworth Street, Greenacre, while the western boundary is Cosgrove Road, Enfield. Access to the site is currently provided via Cosgrove Road, Enfield.

Land use surrounding the proposed project is mixed and varies from existing commercial and light industrial development mainly located along the western and eastern sides of Wentworth Street, Greenacre and the eastern side of Cosgrove Road, South Strathfield to existing residential development associated with the suburbs of South Strathfield to the north-east and east, Chullora and Greenacre to the west and south-west, Belfield to the south and south-east and Enfield further east. Existing land use on the site and in the areas immediately surrounding is shown in Figure 3.

Figure 1 - Regional Context of the Project

Figure 2 - Project Site and Surrounding Area

Figure 3 - Current Land Uses Surrounding the Project Site

Existing residential development is located in close proximity to the site as indicated above in Figure 3. Residential dwellings are located immediately to the south-east of the site (within 50 metres) on either side of Punchbowl Road, north to Blanche Street, South Strathfield and south of Punchbowl Road, Belfield. To the north-west and west, residential development occurs south of the Hume Highway and west of Roberts Road (within 100 metres of the site boundary) and on the southern side of Wentworth Street and east of Roberts Road within the suburb of Greenacre (within 50 metres of the site boundary).

Existing schools located in close proximity to the site or the existing freight line include:

- Strathfield South High School located to the north of Liverpool Road (Hume Highway) and east of Centenary Drive, Strathfield;
- Belmore North Primary School and Belmore Boys High School located on Burwood Road, Belmore located immediately adjacent the existing freight line and to the south east of the proposed ILC; and
- St Annes Catholic School located to the east of Therry Street, Strathfield South to the east of the proposed project.

Other schools such as Greenacre Primary School (Waterloo Road, Greenacre), Malek Fahd Islamic School (Waterloo Road, Greenacre), Banksia Road Primary School (Banksia Road, Greenacre), Chullora Primary School (Norfolk Road, Greenacre), Greenacre Baptist Community School (Shellcote Road, Greenacre), St John Vianney's Primary School (Tempe Street, Greenacre), All Saints Greek Orthodox School (Hampden Road, Lakemba), Strathfield South Primary School (Homebush Road, Strathfield), St Therese Primary School (Yerrick Road, Lakemba), and St Michael's Primary School (Margaret Street, Belfield) are all located further afield, with the majority occurring within a one kilometre radius of the site boundary.

Strathfield Golf Course is located to the north of the proposed project on either side of Centenary Drive and north of Liverpool Road. Rookwood Cemetery and the University of Sydney (Cumberland Campus) are the other major land uses in the vicinity of the site, both of which are located to the north of the Chullora Railway Workshops to the west of Centenary Drive.

2. PROPOSED DEVELOPMENT

2.1 Project Description

The Proponent proposes to construct and operate an Intermodal Logistics Centre (ILC) immediately east of the new Enfield Marshalling Yards, South Strathfield. The layout of the proposed project is shown in Figure 4. The proposal involves the following components:

- demolition, relocation or removal of former railway buildings and structures;
- earthworks and drainage including the levelling of the site, formation of landscape mounds and detention basins and removal of unsuitable materials, as required;
- construction and operation of:
  - an intermodal terminal for the loading and unloading of containers between road and rail and the short term storage of containers;
  - rail sidings, railway lines and associated works to connect to the existing freight line;
  - warehousing for the packing and unpacking of containers and the short-term storage of cargo;
  - empty container storage facilities, for the storage of empty containers to be later packed or transferred back to the port by rail;
  - light industrial/commercial area fronting Cosgrove Road complementary to operations at the site;
  - access works including the construction of a road bridge over the new marshalling yards for access to Wentworth Street and an upgrade of the entrance to the site from Cosgrove Road; and
  - internal roads, administration buildings, diesel and LPG storage and fuelling facilities, container washdown area, vehicle maintenance shed, and installation of site services (all utilities, stormwater and sewerage).

The project would occupy a total area of 12 hectares and would have the capacity to handle 300,000 TEU per annum. The Proponent expects that the site would have a first year throughput of approximately 100,000 TEU with full operational capacity of 300,000 TEU being progressively achieved within eight to ten years of operation.

At full capacity, of the total 300,000 TEU that would be processed by the facility, it is estimated that 150,000 TEU would be inbound from Port Botany and approximately 150,000 TEU would arrive at the site by truck to be sent to the port by rail (outbound). Of the 150,000 TEU inbound annually, 50,000 TEU would be sent to the on-site logistics centre warehouses and the contents unpacked and dispatched to markets by light trucks to the inner and middle western areas of Sydney. Once unpacked the empty containers would be moved to the empty container depots and then eventually returned to Port Botany. The remaining 100,000 TEU would be sent by articulated trucks to off-site importers.

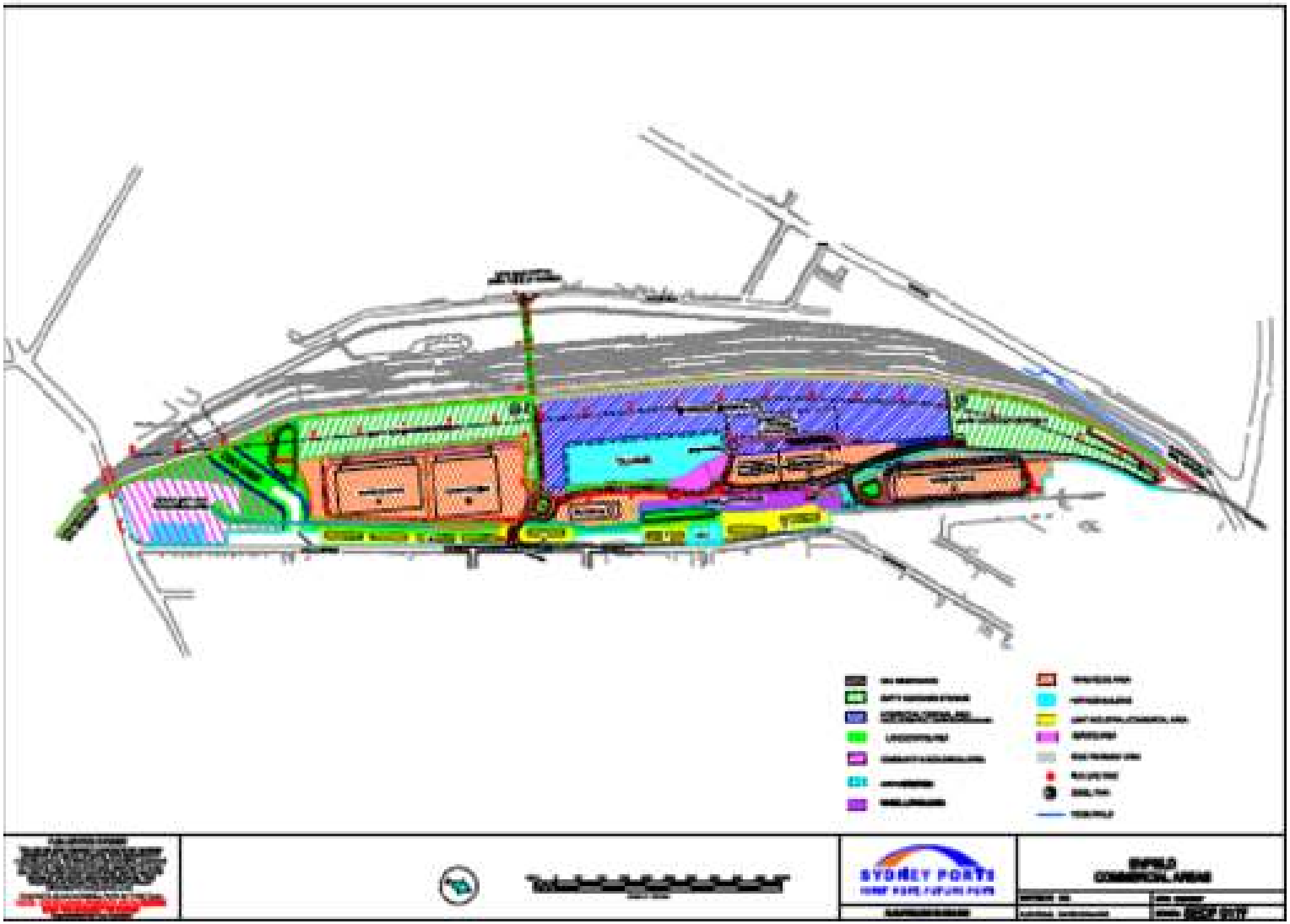
Of the 150,000 TEU per year that would arrive at the facility to be processed prior to being sent by rail to Port Botany, the Proponent estimates that:

- 60,000 TEUs would arrive full as supplied by off-site exporters;
- 80,000 empty TEUs would be returned directly from the empty container depots; and
- 10,000 empty TEUs would be transferred to the warehouses where they would be filled with goods brought to Enfield prior to being transferred to the Port by rail.

The terminal itself would be located in the centre of the site and comprise a flat paved surface for the short term storage of containers. Containers would be stacked to a maximum height of five containers (approximately 13 metres in height). The freight line would run along the western boundary of the project and comprise two 920 metre rail sidings.

The function of the project would be to transfer container freight to and from rail and to facilitate the movement of containers by rail to and from the site. Containers would be unloaded from the rail line and stacked within the terminal area or transferred to inter-terminal vehicles for transport to on-site warehouses for unpacking or loaded onto trucks for dispatch off-site.

Figure 4 - Proposed Project Layout



The Proponent has incorporated a Community and Ecological Area as part of the proposal to provide an opportunity to enhance the site's ecological value. The area lies to the south of Coxs Creek and covers an area of approximately five hectares (refer to Figure 4). The area would include the revegetation of the existing spoil stockpiles, replacing weed species with species of plants endemic to the local area. In addition, the area would provide habitat for the threatened Green and Golden Bell Frog. This species was not located on the site during field surveys undertaken as part of the Environmental Assessment, although is known to occur in the surrounding area.

The capital cost of the proposed facility and associated works is estimated at $153 million (excluding acquisition which is estimated at $45 million). Approximately 170 people would be employed during construction and the project would generate employment for approximately 510 people during its operation.

Construction is proposed to be undertaken by contract and divided into five stages, comprising:

- Stage 1 – Site preparation including remediation, construction of stormwater detention basins and landscaping and noise mitigation;
- Stage 2 – Detailed earthworks and drainage;
- Stage 3 – Road and rail infrastructure, intermodal terminal and empty container storage areas;
- Stage 4 – Warehousing, administration and maintenance, pavement and landscaping; and
- Stage 5 – Commercial and light industrial development along Cosgrove Road.

The total construction period is estimated to take approximately 27 months from the commencement of construction.

2.2 Strategic Freight and Policy Context

The Milton Morris Report

In 2002 a review of the Proponent's previous proposal to develop an intermodal terminal at Enfield was commissioned by the NSW Minister for Transport in response to the considerable community interest generated by the project. The independent review was conducted by the Honourable Milton Morris and finalised in February 2003. The terms of reference for the review were:

- to review the background for the Proponent's proposal for an intermodal terminal at Enfield;
- to identify community concerns related to the proposed development and prioritise the key issues; and
- to advise the Government with regard to the suitability of the Enfield site and alternative sites, taking into account community and economic considerations.

The Milton Morris Report included the following findings and recommendations:

> *"Sydney is facing rapidly growing container trade demand.*
>
> *There is a need for additional intermodal terminal capacity in Sydney over the coming decade which needs to be well planned*
>
> *This planning must take into account recent developments at all three NSW commercial ports; in road construction; and issues around construction of freight only rail tracks in and through Sydney*
>
> *…..the principle of intermodal terminals demands that there should be numerous small facilities spread across the metropolitan areas in order to maximise the distance containers travel by rail and minimise the distance travelled by road*
>
> *While the Enfield site has a number of key attributes for the purposes of an intermodal terminal, the report also indicates that there are intrinsic negatives which should also be weighed when assessing the site's suitability. These are stated as being:*
>
> - *it is only a relatively short distance from Port Botany (18 km) and still a considerable distance from the major manufacturing centres of western and south-western Sydney;*
> - *it is closely surrounded on the west and north by residential areas; and*
> - *it has become increasingly distant from major additions to the metropolitan road network (the M5 and the M7 motorways).*
>
> *The report indicates that the major growth in manufacturing, warehousing and transportation industries has been and will continue to be centred on western and south-western Sydney and therefore the bulk of growth in demand would be much further west than Enfield. This suggests that the construction and operation of an*

> *intermodal terminal at Enfield would result in "double handling" and the resultant costs may actually outweigh the costs of distributing the containers directly from the Port.*
>
> *The Enfield site has a number of advantages and that alternative developments may also impact on surrounding communities,……. the development of the proposed intermodal terminal on the Enfield site, or for that matter on any site, cannot be justified at this stage in light of emergent logistics issues in the Sydney Metropolitan area which need to be addressed first.*
>
> *The report concludes that the development proposed by Sydney Ports Corporation would be an overdevelopment of the site at any stage."*

The report concluded that the proposal for an intermodal terminal at Enfield, in its form at that time (i.e. maximum capacity of 500,000 TEU), was unacceptable and should not proceed. Among the key recommendations of the report are that a major re-assessment of intermodal terminal demand and potential sites be conducted involving all relevant bodies, namely Transport NSW, Sydney Ports Corporation, Newcastle Port Corporation, Port Kembla Port Corporation, and the Rail Infrastructure Corporation. This work should focus on the development of intermodal sites across Sydney within the next decade as its primary consideration. In addition, the report concluded that the Commonwealth Government should immediately release funding to improve freight rail access within the Sydney metropolitan area, specifically to enable the construction of the Chullora-Macarthur freight line. This line, known as the Southern Sydney Freight Line was approved by the Minister for Planning on 21 December 2006.

The Freight Infrastructure Advisory Board (FIAB) Report

On 13 October 2005, the Minister for Planning released a report entitled Railing Port Botany's Containers – A Plan to Ease Pressure on Sydney's Roads. The report was commissioned by the State Government to assist in the formulation of the Government's Port Freight Plan for Sydney. The Freight Infrastructure Advisory Board, chaired by the Hon Laurie Brereton, was established to draft the report.

The report includes a number of recommendations which are pertinent to the proposed development at Enfield. These recommendations include:

- Sydney Ports Corporation's Enfield site be developed as an integrated logistics facility to meet local and sub-regional requirements;
- the project be limited in throughput size to 300,000 TEUs per annum and be operational before the end of 2008;
- participation from the private sector be sought for the site's development and the terminal's ongoing operation;
- the Roads and Traffic Authority review road improvements necessary to support the Enfield development with funding available from the Freight Infrastructure Charge to assist in these works; and
- the development of the major, new terminals at Enfield, Moorebank and Eastern Creek include adequate provisions to allow common-user, open-access operations.

Ports Growth Plan and Port Freight Plan

The NSW Government's Ports Growth Plan, referred to above and announced by the former Premier in 2003, set the strategic direction for the capacity of port expansion in NSW. Over the past three years, the Proponent has designed, submitted and been granted approval for the expansion of the container terminal facilities at Port Botany to an increased capacity of approximately three million TEU per annum. During this process, the Government investigated ways of increasing the proportion of existing and future container traffic moving on rail.

The Port Freight Plan, announced in 2004 set a target of achieving a 40% rail mode share for containers into and out of the port - a substantial increase over current movements on rail in both mode share and volume. Similarly, the Freight Infrastructure Advisory Board's report set out a framework for increasing the share of container freight transported by rail and proposed a network of intermodal terminals throughout Sydney including staged development of new facilities at Enfield, then Moorebank and then Eastern Creek – all substantially larger than existing terminals - as well as an expansion of the existing terminal at Minto and development of a facility at Ingleburn.

The FIAB also made note of the necessary sequencing of the new terminals with recommendations that Enfield be developed by 2008/09, Moorebank by 2013 and Eastern Creek within the next decade. The timing and sequencing of the terminals was recommended on the following grounds:

- the need to provide sufficient intermodal terminal capacity to match the forecast volume growth and the corresponding need to support the increase in rail mode share;
- proximity of existing market volumes;
- availability of suitable sites (area and length) in the key locations;
- likely timing and additional costs of connecting the site to rail;
- access to freight only rail lines; and
- willingness of parties to invest and deliver an intermodal terminal.

Of the three new major intermodal terminals proposed, Enfield was the sole terminal location that could be brought on stream within the first five years, on a dedicated freight line, with a willing proponent and with sufficient surrounding container volume that had the capacity to be attracted onto rail.

The proposed intermodal terminal facility at Moorebank is on a site currently occupied by the Department of Defence. The site would need to be vacated before development and would require a new rail crossing of the Georges River and completion of the Southern Sydney Freight Line before it could be effectively operational. Even with Commonwealth and private sector support, it would not be operational within a five year timeframe.

A new intermodal terminal in the vicinity of Eastern Creek would be located on private property. The surrounding area is still developing and is not adjacent to rail. The site would require significant development, and a major new rail corridor connecting it to the network. This terminal would also not be available within the next five years.

If the Government's objective of achieving an increase in rail mode share of an expanding Port container trade is to be realised, development of Enfield intermodal terminal as the first facility in a new strategic network of major metropolitan intermodal terminals is critical. Enfield's projected scale of operation, its proximity to what is still Sydney's largest industrial catchment, its location on a dedicated freight line, its intended design capacity to accommodate 600 metre trailing length trains and its projected operation 24 hours a day, seven days a week, provide in varying degrees the optimal conditions for:

- compatibility with port infrastructure and operations;
- the most efficient use of rolling stock;
- the most efficient use of locomotives; and
- substantial improvement in daily rail cycle times.

In combination, these factors are key pre-requisites for ensuring that rail can be sufficiently cost competitive to attract a significant volume of metropolitan line-haul container traffic from road transport.

3. STATUTORY CONTEXT

3.1 Major Project

The project is declared to be a Major Project under *State Environmental Planning Policy (Major Projects) 2005* because it is development for the purposes of a railway freight facility or intermodal terminal which has a capital investment value of more than $30 million (clause 23(1)(b)). On 13 December 2005, the Director-General, under delegation from the Minister, formed the opinion that the project meets the requirements of the Major Projects SEPP and thus declared the project to be a major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (the Act).

3.2 Director-General's Requirements and Adequacy of Environmental Assessment

Prior to the commencement of Part 3A of the *Environmental Planning and Assessment Act 1979* on 1 August 2005, the project would have been assessed under Part 4. In this context, the Proponent sought the Director-General's requirements for the preparation of an Environmental Impact Statement and these were issued on 1 March 2005. These requirements were subsequently adopted by the Director-General on 14 December 2005 as Environmental Assessment requirements under Part 3A, pursuant to clause 8J of the *Environmental Planning and Assessment Regulation 2000*.

For the purpose of section 75I(2)(g) of the *Environmental Planning and Assessment Act 1979*, the Environmental Assessment for the project complied with the Director-General's requirements and the Proponent was notified of this compliance on 15 December 2005.

3.3 Environmental Planning Instruments

There are no environmental planning instruments that substantially govern the carrying out of the project.

The *Strathfield Planning Scheme Ordinance* applies to the site and zones the land Special Uses "B" (Railways) (Special Use Zone). The project is a permissible use in the zone.
There are no "prohibited uses" within the Special Uses Zone and as such, the project is constitute wholly permissible development on the land.

The freight rail corridor south of Punchbowl Road where rail connection works are proposed is governed by the *Canterbury Planning Scheme Ordinance*. The corridor is zoned Special Uses B Railways and railway works are permissible without consent.

3.4 Role and Activities of the Independent Panel

Given the high level of community interest in the project and concerns over impacts by local residents, special interest groups and government agencies, on 15 February 2006, the Minister for Planning directed that an Independent Panel of Experts be established to assess specific aspects of the proposal in accordance with section 75G(1)(a) of the Act. The Minister appointed Ms Helen Weston (Chair), Mr Matthew Stephens and Mr John Wassermann to constitute the Panel. The Minister also directed that the Panel was to consider and advise on the following terms of reference:

- local and regional traffic implications;
- residential amenity;
- other issues raised in submissions to the exhibited Environmental Assessment and or to the Panel; and
- adequacy of proposed mitigation measures and the need for additional measures.

The Panel undertook a number of investigations and meetings with relevant stakeholders including members of the public regarding the proposed development and prepared a report for consideration by the Minister for Planning in his determination on the project. The Panel presented its report to the Director-General on 6 November 2006. A copy of the Panel's report is included as Appendix D to this report, with the Panel's findings and recommendations considered in the relevant sections of this report.

The Department concurs with and supports the recommendations made by the Panel, and has recommended conditions of approval that adopt each of the Panel's recommendations. There is only one instance (out of 28

recommendations made by the Panel) for which the Department has not recommended conditions of approval that reflect the outcomes of the Panel's review of the project:

1. Recommendation 6.5 – the Panel recommended that noise limits be imposed on locomotives stationed on the site. The Department recognises that this may be inherently difficult for the Proponent to control and monitor. However, the Department has recommended a condition of approval that explicitly includes locomotive noise as part of the entire site noise for the purpose of assessing compliance with stipulated project noise limits. As such, the Panel's recommendation is indirectly achieved through the specification of a noise limit for the entire site, rather than isolated plant and equipment. This also provides the Proponent with the flexibility to reduce noise elsewhere on the site to achieve noise criteria, if it is unable to directly influence or control locomotive noise emissions.

4. CONSULTATION AND ISSUES RAISED

The Environmental Assessment was publicly exhibited between 10 January and 20 February 2006 and a total of 331 submissions were received. Submissions were received from state and local government agencies, special interest groups, private organisations and the local community. Of the total submissions received, 92% objected to the project, 5% supported the project and the remaining 3% did not explicitly state a position. A break-down of submissions based on stakeholder groups is provided in Table 1.

Table 1 - Submissions Received from Stakeholder Groups

Stakeholder Group	Number of Submissions Received
State Government agencies	8
Local councils	8
Private individuals	295
Special interest groups	8
Private organisations/industry	12
Total	**331**

It is also relevant to note that of the public submissions received, the majority were made by members of the public with postal addresses in Greenacre and Strathfield/ South Strathfield. A significant number of submissions were also received from Marrickville residents (principally related to rail corridor issues). A break-down of public submissions based on major postal origins (ie more than 1% of all submissions) is provided in Table 2.

Table 2 – Public Submissions Received by Postal Origin

Suburb	Postcode	Number of Submissions	Percentage of Submissions
Greenacre	2190	112	34.0%
Strathfield (including North and South Strathfield)	2135 (2136, 2137)	53	20.7%
Marrickville	2204	43	13.1%
Belfield	2191	21	6.4%
Chullora	2190	12	3.6%
Sydney	2001	7	2.4%
Sydenham	2044	6	1.8%
Bankstown	2200	5	1.5%
Enfield	2136	5	1.5%

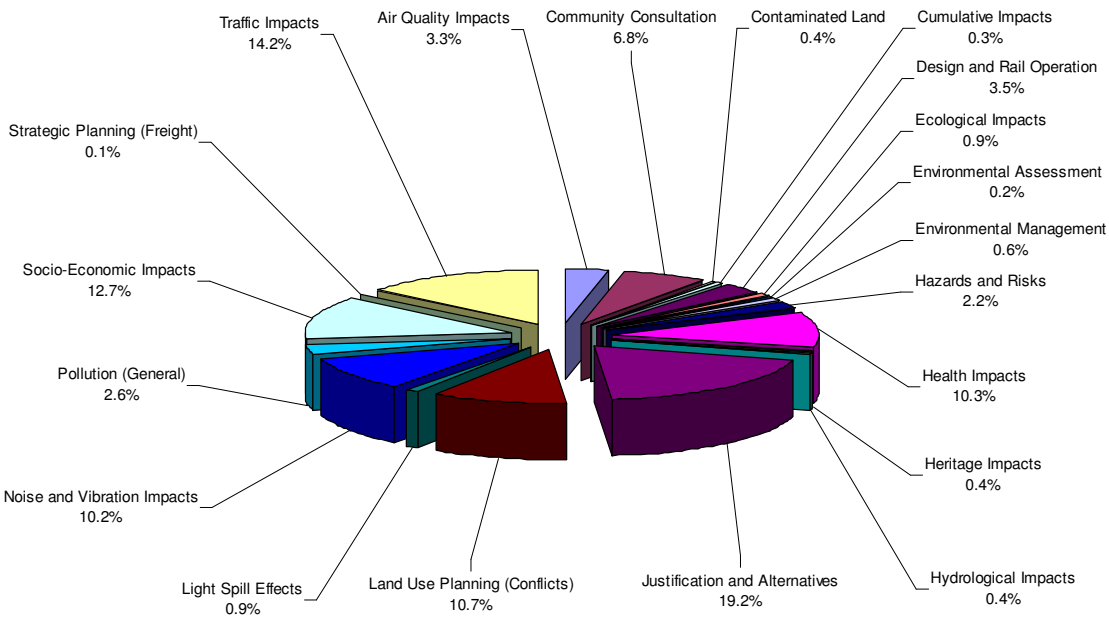
A summary of issues raised in submissions is presented over in Figure 5. The graph indicates the relevant frequency of a particular issue against all issues raised, rather than as a percentage of submission raising that issue.

4.1 Stakeholder Meeting

On 4 July 2007, the Minister convened a meeting of key stakeholders affected by the project. The meeting was attended by local residents from around the project site, representatives of Strathfield, Bankstown, Marrickville, Canterbury, Auburn and Burwood councils, the Roads and Traffic Authority, the Department of Planning, the Proponent and the local members for Strathfield and Auburn. Key concerns of each stakeholder were discussed at the meeting, with a particular focus on traffic, noise and air quality concerns. Other issues including contaminated soil, ecological impacts, general amenity and the Independent Panel process were also discussed.

As a result of the Minister's stakeholder meeting, further discussions were held between the Department, the Proponent, the RTA, Bankstown Council and Strathfield Council in relation to traffic issues. The outcomes of this meeting are considered further in section 5 of this report.

Figure 5 - Issues Raised in Submissions



4.2 Submissions from State Government Agencies

The Department received eight submissions from State Government agencies: the Department of Environment and Climate Change (DECC); the Department of Health; the Roads and Traffic Authority; RailCorp; Ministry of Transport (two submissions); the then Department of Natural Resources; and the NSW Heritage Office. A brief outline of the key issues raised by each of these agencies is provided below.

Department of Environment and Climate Change

The Department of Environment and Climate Change (DECC) did not object to the project, but noted that a number of impacts, particularly during operation of the project required careful attention to ensure that acceptable environmental outcomes were met. The DECC drew particular attention to issues relating to noise and air quality (dust). Specific comments made by the DECC are summarised below:

- additional analysis of wind speeds between 0.5-3 m/s and directions should be assessed as part of the air quality assessment;
- the noise assessment 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 number of houses with significant exceedances above the PSNL is likely to be significantly more than the 140 affected residences under calm isothermal conditions;
- the exceedances of sleep disturbance criteria are significant and therefore a more detailed analysis needs to be undertaken to cover the maximum noise levels, the extent that the maximum noise exceeds the background level, the number of times this happens in the night period and the nature and the character of the noise;
- the number of residences that experience acute noise road traffic noise levels has not been identified. Given the government's objective to reducing road traffic noise increases on roads surrounding Port Botany, it would be logical to also consider the extent of traffic noise impact in the vicinity of the proposal in terms of exposure to acute noise levels;
- rail noise between Port Botany and the Enfield site is of concern. Valuable reductions in noise can be achieved through the use of modern rolling stock. Options for best-practice rolling stock that could be considered 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.
- construction is to be undertaken between 7 am and 6 pm Monday to Friday and 8 am to 1 pm on Saturdays and no work on Sundays or public holidays. Work should not be undertaken outside these hours unless there is a specific justification for doing so;
- the Proponent's statement of commitments is not considered capable of delivering acceptable noise outcomes;
- sediment and erosion controls should be maintained on a regular basis and updated as required in response to changing site conditions. In addition, all temporary construction exits should be fitted with vehicle shakedown and washing facilities to control sediment and mud on site;
- the assessment of air quality needs additional work in order for impacts of the proposal to be fully characterised. It appears that the wrong impact assessment criterion for PM_{10} has been used throughout the air quality assessment;
- a good mitigation strategy appears necessary to prevent impacts from both construction and operation activities including:
  - → a revised air quality impact assessment that demonstrates compliance to appropriate criteria should be developed in parallel with: development of a more detailed construction and operation air quality management plans; and development of a refined air quality impact mitigation strategy to prevent impacts;
  - → all technical issues should be addressed through additional assessment work.
- a remediation action plan (RAP) should be developed for the site in accordance with SEPP 55 and the DECC's Guidelines for Contaminated Sites. This RAP should address the contamination identified in site investigations and address issues raised in the site audit reports undertaken for the former marshalling yard and the DELEC site;
- if fuels, oils or chemicals are to be stored on site, then they are to be appropriately bunded and covered in storage facilities with impervious floors to prevent leaching or spillage of these materials into the surrounding environment;
- ensure that the proposal does not create any barrier preventing movement of Green and Golden Bell Frogs downstream along the Cooks River. The proposed management plan for the site should address the following issues:
  - → construction of temporary frog-proof fencing to prevent frogs entering construction and operational areas;
  - → clearance of frogs from construction areas prior to construction;
  - → design and operation/management of the proposed frog breeding pond;
  - → vegetation and management of the proposed frog foraging areas;
  - → protocols to be followed when implementing management actions within the breeding and foraging areas - such as clearance of frogs from areas where harm might occur (eg during grass slashing);
  - → design and construction of facilities, such as the noise walls and mounds where Coxs Creek exits the site, so as not to preclude the future possibility of Coxs Creek being part of a frog corridor eventually linking Enfield with Arncliffe; and
  - → details of a monitoring plan for the frog habitat area.

NSW Department of Health

The Department of Health indicated in its submission that noise and air impacts were the main issues of their concern, although contamination, light spill, hazards and risks, community and social impacts and safety issues were also raised. The Department of Health's key concerns can be summarised as follows:

- the noise impact assessment does not address sensitive receptors such as St Anne's School and Strathfield South High School;
- exceedances of up to 35 dB(A) above the construction noise goals are of concern;
- exceedances of up to 15 dB(A) above the operational noise criteria during operations are of concern. Because the proposal intends to operate 24 hours a days, seven days per week, it is important that community impacts strictly comply with noise criteria (including sleep arousal criteria);
- road traffic noise already exceeds the noise criteria by between 7 and 21 dB(A). While the predicted additional noise generated by the proposal falls within the allowable 2 dB(A) increase in accordance with the DECC's *Environmental Criteria for Road Traffic Noise*, additional mitigation measures should be pursued in view of the pre-existing noise impacts experienced by affected residents;

- rail noise has not been directly assessed as part of the proposal and should be further considered in the context of cumulative noise impacts;
- cumulative noise impacts have not been addressed. Cumulative impacts of road and operational noise may be significant to the north-west of the proposal (for residences located between Norfolk Road, Hume Highway, Roberts Road and Waterloo Road) and cumulative rail and operational noise may be significant to the south-west of the proposal (in the vicinity of Bezantin Road, Belfield);
- additional mitigation measures to be included as part of the commitments of the project to reduce noise such as:
  - → use of alternative quieter technologies (such as electric powered machinery);
  - → implementation of best work practices and site design to minimise intermittent noise generation from unloading and loading containers; and
  - → comprehensive community consultation and liaison plan that includes community involvement, monitoring to determine actual impact, a response strategy should noise impacts be unacceptable and a responsive noise complaint system.
- the Proponent has incorrectly adopted the National Environmental Protection Measure (NEPM) goals in allowing exceedances of PM_{10} of the assessment report. The NEPM goals relate to achievement of standards across an airshed and are not intended for application to project specific or point source pollution;
- the air quality modelling assumptions do not appear to follow DECC guidelines. The restriction of data to only when wind speed is less than 5m/s rather than modelling all weather conditions needs to be justified;
- Figures represent more than a doubling of the current maximum exposure to construction generated pollutants. Increased exposure to PM_{10} of this magnitude may increase the risk of health effects such as asthma, exacerbation of chronic obstructive pulmonary diseases, and irritation of the eyes and upper airways within the surrounding local community. However if all weather conditions were taken into account, predicted increments and associated health impacts may be higher;
- a detailed and proactive strategy needs to be developed to reduce air impacts from the proposal.
- due to the potential that air pollution impacts during construction may be substantial, additional measures should be added to the Proponents commitments to reduce potential air impacts such as:
  - → continuous downwind boundary monitoring of PM_{10} with a feedback mechanism to site the manager when pre-determined levels for modifying and ceasing works are reached;
  - → timely mechanism linking community complaints line to the site manager so that works can be modified or ceased when high off-site dust levels are reported.
- Health has concerns that the Environmental Assessment underestimates the traffic impact on local roads, which may have the effect of underestimating the local pollutant impacts. To fully consider the operational phase exposure to air pollutants the local road pollutant impacts should be added to on-site operation impacts and considered as part of the assessment of cumulative impacts;
- additional commitments to be placed on the Proponent are suggested to include:
  - → all on-site plant to be low (US Tier 3 or better) or zero emission (such as electric powered machinery (also provides noise reduction benefits);
  - → on -site staff transport to be electric, hybrid or other low emission vehicles or the requirement for the projected 300 on-site car trips per hour be substantially reduced by better site design and work practices;
  - → trucks accessing the site to be Euro 3 or better, on approved maintenance schedule;
  - → requirement for minimal truck idling times on-site; and
  - → liaise with rail freight operator to utilise cleaner fuel/improved maintenance to reduce emissions.

Roads and Traffic Authority

The RTA generally supports the proposal but raised the following concerns:

- the traffic analysis undertaken as part of the Environmental Assessment was not comprehensive enough to indicate the operational performance of linked intersections along Roberts Road and the Hume Highway;
- 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 volume, the modelling results show their impact to be significant;
- the modelling results indicate that the operational performance of the road network would be improved with a one-way pair option using Cosgrove Road/Gould Street;

- the Cosgrove Road/ Hume Highway intersection requires upgrading however the operational performance of this and other intersections along the Hume Highway could be improved by a one-way pair option making Cosgrove Road (southbound) and Gould Street (northbound as a one-way pair);
- the Proponent has indicated that the entry/exit at Cosgrove Road would only be used by a small number of heavy vehicles to access the project. In view of the cost of upgrading this intersection, the Proponent has indicated that it would implement measures to limit the number of heavy vehicles using Cosgrove Road as an entry/exit point. The RTA considers that this may obviate the need to upgrade this intersection in the short term;
- the Roberts Road/Norfolk Road intersection is presently operating adequately, however, with the project in operation, there would be a need to upgrade this intersection to accommodate the turning movements of B-Double vehicles into/out of Norfolk Road onto Roberts Road for both physical turning capability and safety reasons;
- heavy vehicle movements associated with the project should be restricted to the major road network and not travel through residential areas - a range of traffic management measures will be required to be implemented to effectively deter heavy vehicle movements in residential areas while allowing residential access and minimal impact to bus routes;
- capacity to park trucks determined by their dimensions; the volume of trucks accessing the site and at peak times; turning paths for trucks to facilitate movement around parking areas and the site; consideration given to the community parking and access requirements for the community recreation and ecological areas to ensure their separation from trucking activities;
- the RTA supports proposal that traffic is accommodated on site. It also supports the development of a site traffic management plan to bind all lessees and transport operators to a central objective of developing the project site as a model of good practice; and
- the RTA recommends that parking and queuing arrangements for trucks is considered in light of safety standards for good fatigue management for truck drivers.

Rail Corporation of New South Wales

RailCorp supports the project as it would contribute to the Government attaining a 40% modal share of Port Botany containers on rail. The Proponent will require various approvals from RailCorp to install and commission tracks, to provide signalling, communication links and other services between the project and RailCorp's existing infrastructure and to undertake any works on RailCorp land. The remainder of the submission describes the requirements for:

- interface, siding and terminal operation aspects;
- access changes to the DELEC and wheel lathe area;
- acoustic wall on the northern and southern boundary of the proposal;
- road overbridge for access to Wentworth Avenue;
- transmission lines and other infrastructure;
- drainage and flood mitigation;
- contaminations aspects;
- rail network capacity forecast demand and train operations; and
- noise and vibration impacts.

In terms of air quality, the Environmental Assessment states that air quality and regulation matters arising from changed rail operations on the rail network will need to be covered by RailCorp as part of its operating licence requirements. RailCorp, in its submission, indicates that this conclusion is not correct and that this issue would need to be addressed by the Proponent. Further, RailCorp indicates that the Environmental Assessment does not address the cumulative impacts associated with the increased use of the RailCorp network at a regional level, with particular emphasis on freight distribution and noise. RailCorp considers that this issue needs to be resolved by an interagency working party to address the consequential impacts on regional rail corridors associated with projects that contribute to the NSW Government's Ports Growth Plan.

Ministry of Transport

The Ministry of Transport supports the development as it:

- is consistent with the Government's strategic framework initiatives for the management of containers in the metropolitan area, particularly the Ports Growth Plan, the Port Freight Plan and the work of the Freight Infrastructure Advisory Board;

- promotes the achievement of the Government's target for a 40% rail mode share for container movements from the port by 2011; and
- is already linked to the port by a dedicated freight line.

The Ministry outlines the issue regarding the management of rail noise. This situation is made more complex by the impending transfer of the line to the Commonwealth Australian Rail Track Corporation (ARTC) following the final approval for construction of the Southern Sydney Freight Line. This issue would have implications for track managers and needs to be considered in the broader context of the Government's position on mitigation measures required for new rail developments.

Department of Natural Resources

The then Department of Natural Resources provided the following comments as part of its submission:

- the detention basins require no further assessment and do not require licensing under the NSW Farm Dams Policy as they are exempt; and
- supports the concept to rehabilitate the southern area of the site surrounding Coxs Creek and strongly encourages the Proponent to take the opportunity to make a significant contribution to the health of the catchment.

NSW Heritage Office

The NSW Heritage Office provides comments regarding the potential heritage impact of the development as part of its submission. The Heritage Office considers that the Pedestrian Footbridge, Wagon Repair Shed and Yard Master's Office are of local significance and should be retained on site.

Prior to the demolition of the former Yard Master's Office, full archival recording should be undertaken in accordance with NSW Heritage Office guidelines. In addition, the Proponent should be asked to prepare a heritage interpretation plan and strategy for the whole site prior to the commencement of works and to undertake an assessment of the European archaeological potential of the site.

4.3 Submissions from Local Councils

The Department received eight submissions from four local councils: Bankstown City Council (two submissions); Canterbury City Council (two submissions); Marrickville Council; and Strathfield Municipal Council (three submissions). A brief outline of the key issues raised by each of the councils is provided below.

Bankstown City Council

Issues raised in submissions from Bankstown City Council can be summarised as follows:

- Council has concerns about the proposed access to and from the facility, the assumptions behind some of the traffic modelling, the impact on some already under performing intersections, the impact on arterial road congestion and adjoining residential land uses, and the need for State Govt commitment to a wider strategy of arterial road upgrading works to support the proposal;
- in spite of the findings of Environmental Assessment there are concerns that a significant number of residents could be affected by noise during the construction and operation of the facility. There are also concerns that the proposed mitigation measures will not be effective and that the noise impacts have been underestimated;
- concerned about the air quality impacts to the residents in Greenacre, particularly during the construction stage. While some mitigation measures have been suggested, these seem to be directed more towards the residents east of the site, rather than the residents in Greenacre;
- given the complex nature of the hazard assessment and because it has an important bearing on public safety, it is considered prudent that the findings of the hazard assessment be peer reviewed by an independent expert prior to any approval being given to the proposal;
- additional work is necessary to ensure that lighting impacts are adequately addressed;
- Council considers that Sydney Ports' level of consultation with Council has been disappointing for a proposal of this significance and magnitude – Council was not adequately consulted before the Environmental Assessment was lodged. Council had requested consultation as part of the preparation of the Environmental Assessment to ensure that any concerns that it may have about the proposal's impacts on residents of Bankstown could be addressed in the preparation of the Environmental Assessment - not after it has been lodged;

- One State Environmental Planning Policy (SEPP 33 - Hazardous and Offensive Development) which may bear upon the permissibility of the development has not been properly considered. The Environmental Assessment does not address the "offensive" aspects of SEPP 33, even though this SEPP applies to the proposal, and has a bearing on whether or not the proposal is permissible. The failure to consider this matter and establish the permissibility of the proposal under SEPP33 is an oversight;
- Council has concerns about the proposed access to and from the facility, the assumptions behind some of the traffic modelling, the impact on some already under performing intersections, the impact on arterial road congestion and adjoining residential land uses, and the need for State government commitment to a wider strategy of arterial road upgrading works to support the proposal. Council is also concerned that the Environmental Assessment 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 Council believes 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 Road, and as a result would not generate undue traffic impacts to the residents of Greenacre. To support this option, Council's submission included a report by an independent consulting firm (Parsons Brinckerhoff) to demonstrate that this access route is feasible, and would not significantly impact on the road network. The report also identified other deficiencies in the Environmental Assessment which further highlights Council's concerns about the traffic impacts. Other recommendations include: identification of designated routes for trucks and the monitoring and enforcement of these routes; upgrading by the RTA of roads, intersections etc; ongoing monitoring of traffic impacts; review of modelling of traffic impact intersection performance;
- Council has concerns about noise impacts during both the construction and operational phases. We are concerned about the predicted noise levels including in the Environmental Assessment, many of which exceed relevant criteria, and the fact that even these noise levels may have been underestimated. Council is also concerned that the numbers of residences potentially affected by noise may have been underestimated, and that the proposed mitigation measures will not be effective. Council considers that the Environmental Assessment has not shown that the proposal can operate or be constructed without generating severe noise impacts for the following reasons: flaws in the assessment technique which Council thinks may have underestimated the extent of noise impact; the predicted noise levels, which are at time significantly in excess of the relevant criteria; the numbers of people potentially affected by noise (perhaps several hundred); and the noise mitigation measures that are proposed do not appear as though they will be effective in reducing noise to acceptable levels; the need for a noise management plan to be prepared and submitted for assessment before any approval for the proposal;
- Council is concerned about the air quality impacts to the residents in Greenacre, particularly during the construction stage. Whilst some mitigation measures have been suggested, these seem to be directed more towards the residents east of the site, rather than the residents in Greenacre;
- the Environmental Assessment does not mention compliance with the relevant Australian Standards for control of obtrusive outdoor lighting. The Environmental Assessment should provide further advice about how the proposal complies with relevant Australian Standards for Obtrusive Lighting (such as AS 4282-1997 - Control of the Obtrusive Effects of Outdoor Lighting). Council considers that comment on the potential light impact should be sought from professional bodies such as the Astronomical Society of Australia, and relevant space observatories;
- it is noted that detention basins are proposed to be built. Council suggests that the Environmental Assessment consider whether these basins could be defined as a "dam". If so, the NSW Dams Safety Committee should be consulted. Irrespective of this, there should be a program put in place for on going monitoring and inspection of these basins;
- The facility would create significant numbers of jobs both directly and indirectly. It would reasonably be expected that residents of Bankstown would be involved in some of these jobs as a result of this facility and Council acknowledges the positive socio-economic effect that this would have on the Bankstown community;
- The PHA needs a detailed technical review by experts in this field, and we request that is be peer reviewed, we consider this to be necessary for a number of reasons: to confirm the assumptions made about the modelling (included in Chapter 6 of Appendix K); need for a sensitivity analysis - this will allow the uncertainty regarding assumptions about particular materials and their quantities to be included in the calculation of risk contours; review of findings of PHA - Given that this issue is directly relevant to pubic safety, Council believes that all the calculations behind the PHA should be verified or peer reviewd by another expert in this field. It is unclear whether the risk contours are calculated from individual events or whether they are based on combined events; review of mitigation measures and need for further studies - mitigation measures should be reviewed for their suitability. The Environmental Assessment only includes

a preliminary hazard analysis. Other stages are also recommended, including such studies as a detailed hazard analysis, a Hazard and Operability Study (HAZOP) study, and an emergency management plan. Until appropriate peer review of the hazard assessment has been undertaken which addresses its concerns, Council is not convinced that the hazard issues have been adequately dealt with;

- Council considers that there is a need for a detailed Environmental Management Plan to be prepared to help manage impacts during both the construction and operational phases of the facility. As well as the inclusion of specific means to mitigate impacts, the EMP should identify responsibilities for implementing its recommendations, as well as for regular monitoring of its effectiveness, and reporting of the environmental performance of the facility. It would also be appropriate for a Consultative Committee to be established that includes representatives from Bankstown and Strathfield Councils as well as Sydney Ports, the Department of Planning and perhaps other agencies to provide ongoing review of the environmental performance of the facility.

Canterbury City Council

Issues raised in submissions from Canterbury City Council can be summarised as follows:

- it is premature to consider such a proposal on this site until there is an adopted freight strategy for Sydney. The FIAB report goes some way towards this, but is still not an adopted strategy. Until there is an adopted strategy, development of an intermodal logistics centre at Enfield is considered to be premature;
- Council will want to be satisfied that the configuration of the southern end of Cosgrove Rd is satisfactory to limit heavy vehicle movements, as no details are provided in the Environmental Assessment. The intention to do these works should be enforced by condition of consent if approved;
- with respect to rail noise, the Environmental Assessment uses second-hand noise assessment information which is not independently critiqued; in the Environmental Assessment it is stated that this growth would occur in any event because an alternative intermodal logistics centre would need to be developed to meet the Government's rail freight transportation objectives. This statement is regarded as a "cop-out" because it ignores that the proposal is an essential part of the Government's freight strategy, and it will in itself contribute to the increased train movements; no assessment has been made of the potential increased operation of freight trains at night, where background noise levels are less and noise sensitivity is greater due to people sleeping. Also no consideration has been given to the noise differences between freight trains and City Rail passenger trains; the Environmental Assessment has not considered noise and vibration mitigation measure including train scheduling, curfews and physical measures as requested. Assessment should take into consideration the recent Rail Infrasructure Corporation/State Rail Authority Interim Guidelines in planning process; there is a wider issue that needs to be considered which is of the noise and vibration impacts arising from the future operation of the freight line - it will contribute for any noise mitigation measures required; this proposal will contribute to potential noise impacts;
- it is a major concern that the increased operation of the freight line will result in a significant deterioration of amenity for residents living nearby;
- even with mitigation measures in place, maximum noise levels may still be exceeded when wind conditions are adverse. Noise generated from construction activities may also potentially exceed NSW DECC criteria. If the noise impacts arising from both the construction and operation of the site cannot be satisfactorily mitigated the proposal should not proceed in its current form. Any noise mitigation measures required to reduce unacceptable noise levels should be enforced by a condition of consent if this proposal is approved;
- the Environmental Assessment has not assessed the air quality impacts of diesel emissions along the freight line corridor. Given that the corridor is electrified, consideration should be given to using electric trains;
- for such a major project the choice of time to exhibit the Environmental Assessment is poor (holiday period) and does not enhance the credibility of the consultation process. Given the technical nature of the info in the Environmental Assessment this period of time is also far too short to make a proper assessment of many aspects of the proposal, as well as allowing lead time to report to and fit in with Council meeting times and deadlines;
- the hazard identification summary in the Environmental Assessment does not list the hazard from diesel spills from locomotives. It also limits the consequence of a spill from the diesel storage tanks to a potential fire. There is no mention of the risk of escape to local waterways. There needs to be certainty that in the event of a catastrophic failure of one or more of the diesel tanks the site has the capacity to prevent the spill leaving the site, particularly if this site coincided with wet weather. The Incident Reporting System should specifically include alerting downstream councils should a major incident occur; and

- it is considered the Environmental Assessment should investigate options for water quality treatment that would deliver a greater reduction in the heavy metal load that the site is currently contributing to the Coxs Creek.

Marrickville Council

Issues raised in submissions from Marrickville Council can be summarised as follows:

- matters relating to rail noise and vibration have not been properly addressed - it is not adequate to rely on the assessment undertaken as part of the Port Botany EIS - this EIS only looked at the effects of rail noise on the freight line between Port Botany and Marrickville - no assessment was undertaken between Marrickville and Enfield which is considered to be unacceptable;
- the Proponent should be required to conduct a full and accurate assessment of the noise and vibration impact of freight trains (including the additional trains as a result of the expansion of Port Botany) and an intermodal logistics centre at Enfield travelling between Port Botany and Enfield; and
- where households are affected by noise and vibration levels that seriously diminish the quality of life or are above the "permissible limit", Sydney Ports Corp should: investigate the appropriateness of installing noise-abatement walls where appropriate; compensate affected residents; and offer to purchase the affected properties, at a fair price. Consideration should also be given to electrifying the freight rail line connecting Port Botany to the site to reduce noise.

Strathfield Municipal Council

Issues raised in submissions from Strathfield Municipal Council can be summarised as follows:

- 24-hour operation will conflict with the night time amenity of the neighbouring residential suburbs despite proposals to mitigate the impacts. Restricted operation hours should be applied. It is recommended that the appropriate hours are 6am to 10pm Monday to Friday and 8am to 10pm on Saturday and no time on Sunday;
- if there is a need for an intermodal it should be established further to the west of Sydney, which is the targeted area and final destination for over 60% of the freight passing through the proposed Enfield site;
- the Proponent's argument in relation to relieving road congestion by transferring freight by rail is seriously flawed as in excess of 60% of all goods arriving by rail will still require to be transported by road. Questions the ability to operate effectively and efficiently without utilising the road network that is currently over capacity. Is the NSW Government's policy to increase freight transported by rail actually achievable looking at Melbourne's statistics?
- the Environmental Assessment does not address the important areas of types of locomotives and rolling stock, way and works infrastructure requirements for operations and maintenance;
- the Enfield Marshalling Yard is one of three key properties for the Greenacre population of Green and Golden Bell Frogs. The ecological area provides an opportunity to provide secure habitat for the species if it is appropriately designed and linked into a network of habitat in Greenacre. An appropriate land use planning mechanism is required to ensure the ecological area is not developed in the future;
- Council believes the State Government has responsibility for the noise impact from locomotives travelling to and from intermodal logistics centre and the Environmental Assessment should consider the big picture and include this issue in the assessment. Adverse impact on residences in the Cosgrove Road/ Blanche Street area from construction noise in adverse weather conditions even with mitigation measures. Modelling of noise impacts from road traffic and the conclusion that no exceedances or significant impact will result from road traffic are seriously questioned due to inaccurate traffic volume data;
- no mention is made of the threat of contamination to the Green and Golden Bell Frog population. The statement that the required remediation work will be Category 2 under the provisions of SEPP 55 may be incorrect if this contamination is likely to have significant effect on this threatened species according to clause 9(c). A Remediation Action Plan (RAP) is required prior to remediation work commencing, prepared in accordance with DEC guidelines, SEPP 55 and the *Contaminated Land Management Act 1997*. 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;
- through consultation local residents have expressed concerns including: road congestion, noise and road and rail traffic, air pollution, general loss of amenity due to 24-hour operation, increased traffic accidents, possible hazardous incidents and loss of on street parking. Further investigations is required to determine full impact on community;

- the site is of heritage significance in illustrating the history and former use of the site. A comprehensive development history and historical survey of the site is required. The surviving significant historic built elements which contribute to the historic legibility of the site should be preserved on site
- tall stacks of shipping container, site infrastructure, warehouses and the road bridge will be visible from many roads, overpasses and residential areas. Additional site perimeter landscape screen/buffer planting is required to mitigate this detrimental visual impact. There is a general lack of detail in the masterplanning including urban design, detail landscape design and planting detail – it is difficult to fully assess the urban and landscape design and the full impact of the proposal;
- light trespass and sky glow are serious matters with adverse effects on the environment and human health. Reference made to Australian standards such as AS 4282-1997. Council expects that the Department will request computer modelling of any proposed lighting installation;
- The proposed community/ecological area land should be rezoned as 6b (Proposed Open Space Zone) for the community area and 7 (Environmental Protection Zone) for the Frog Habitat Area (in accordance with the zoning categories in the draft Strathfield LEP 2003). 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. Street trees should be retained and enhanced as suggested in the strategy. Local ownership of the proposed community and ecological area should be handed over to Council and the Proponent contribute to the full cost of the ongoing maintenance of this facility; and
- the proposed development should be subject to section 94 contributions should Council decide to levy 94 contributions from Industrial developments as part the 2006 five-year review of Strathfield Council's Section 94 plan; specific contributions on an annual basis should be made for local community benefit in line with Strathfield Council's identified planned community and recreational facilities in the South Strathfield area.

5. ASSESSMENT OF ENVIRONMENTAL IMPACTS

Key issues raised in the submissions in response to the public exhibition of the project and/or identified during the Department's assessment include:

- traffic and transport impacts;
- noise impacts;
- heritage impacts; and
- air quality impacts.

All other issues are considered to be minor and have been addressed as part of the Proponent's Statement of Commitments.

5.1 Traffic and Transport Impacts

Issues

There are four key issues associated with the project in relation to traffic and transport:

- site access arrangements;
- predicted impacts on the regional road network as a result of the construction and operation of the project;
- predicted impacts on the local road network as a result of the construction and operation of the project; and
- predicted impacts on rail infrastructure.

Site Access Arrangements

The Proponent has configured the project generally along an approximate northwest-southwest axis running parallel to the length of the site, with two site access points to the east and the west, respectively. The principal access point to the site would be to and from the west, with a new overbridge constructed to connect the site to Wentworth Street, which in turn leads to Norfolk Road and then Roberts Road. The secondary access point to the east, onto Cosgrove Road, is proposed by the Proponent to accommodate local and sub-regional traffic flows towards the east, and as an alternative access point in the event of emergencies. The Proponent has reinforced the fact that key markets for freight handled by the project generally lie to the west of the site, supporting the view that the western Wentworth Street/ Norfolk Road access arrangement would be the principal access point for the site. In addition, the Proponent has included in its Statement of Commitments, the intention to provide a manual or technological solution to control the frequency of traffic movements in and out of the Cosgrove Road access point, particularly during morning and afternoon peak periods.

The Environmental Assessment presents a number of alternative access arrangements considered by the Proponent. Each of these alternatives was discarded by the Proponent based on a combination of engineering considerations, operational practicalities and the need in some circumstances to resume land and demolish existing developments. The Proponent argues that the proposed access arrangements for the site provide acceptable operational outcomes, while minimising traffic impacts on the surrounding road network and avoiding unnecessary conflicts with existing land uses.

Regional Traffic Impacts

The Proponent predicts that during construction of the project, up to 75 construction vehicles will enter and leave the site each day (during the 15-month peak construction period) and would average 29 construction vehicles per day over the entire construction period. In addition, the Proponent also predicts that passenger vehicles accessing and leaving the site (for construction staff) would peak at 240 vehicles during the two most intense months of construction. The Proponent suggests that construction traffic generation would be negligible relative to current levels of traffic utilising the surrounding road network.

During operation (at a maximum capacity of 300,000 TEU), it is expected that the project will generate 1,160 truck movements per day, of which 30% would be light trucks. Of these total daily truck movements, the Proponent anticipates that 103 truck movements would occur during the afternoon peak period (2:00 pm to 3:00 pm), and 88 movements during the morning peak period (7:00 am to 8:00 pm). In addition to truck movements, passenger vehicle movements associated with the project would be in the order of 142, and for the light industrial/ commercial area, 169 movements (cars and smaller trucks).

The Proponent's Preferred Project Report presents an updated assessment of traffic impacts on the surrounding round network. The expected traffic contributions from the project to the surrounding road network during morning and afternoon peak periods is summarised in Table 3 and Table 4.

The Proponent notes that traffic contributions from the project to the surrounding road network are generally in the order of 1-3%, with the most significant increases in traffic volumes associated with the access points to the site (Cosgrove Road and Wentworth Street). The Proponent highlights that the relatively high increases in traffic volumes near site access points (generally around 30%) are a consequence of low background traffic volumes on those roads (generating a relatively large increase in traffic).

Table 3 – Predicted Traffic Contributions (Morning Peak)

Location	Direction	Current Situation (2005)	Future Situation (2016)	Future with Project (2016)	Change with Project
Boronia Road (east of Hume Highway)	Eastbound	429	693	688	-1%
	Westbound	388	807	824	2%
Centenary Drive (south of Barker Street)	Northbound	4,018	4,416	4,346	-2%
	Southbound	3,190	3,332	3,390	2%
Cosgrove Road (south of Hume Highway)	Northbound	436	459	484	5%
	Southbound	452	466	611	31%
Georges River Road (east of Coronation Parade)	Eastbound	1,385	1,292	1,277	-1%
	Westbound	1,137	1,298	1,323	2%
Hume Highway (west of Centenary Drive)	Northbound	3,463	4,451	4,404	-1%
	Southbound	2,573	2,958	2,929	-1%
Hume Highway (east of Cosgrove Road)	Eastbound	2,447	3,301	3,280	-1%
	Westbound	1,954	2,371	2,448	3%
Hume Highway (north of Stacey Street)	Northbound	2,608	2,536	2,532	0%
	Southbound	1,795	1,749	1,773	1%
Roberts Road (south of Norfolk Road)	Northbound	2,506	2,593	2,589	0%
	Southbound	1,892	1,868	1,899	2%
Wentworth Street (east of Roberts Road)	Northbound	73	120	163	36%
	Southbound	239	317	414	31%

Table 4 – Predicted Traffic Contributions (Afternoon Peak)

Location	Direction	Current Situation (2005)	Future Situation (2016)	Future with Project (2016)	Change with Project
Boronia Road (east of Hume Highway)	Eastbound	495	568	571	1%
	Westbound	429	775	785	1%
Centenary Drive (south of Barker Street)	Northbound	3,041	3,659	3,649	0%
	Southbound	3,766	3,772	3,772	0%
Cosgrove Road (south of Hume Highway)	Northbound	507	551	762	38%
	Southbound	472	558	534	-4%
Georges River Road (east of Coronation Parade)	Eastbound	1,051	1,037	1,033	0%
	Westbound	1,307	1,254	1,263	1%
Hume Highway (west of Centenary Drive)	Northbound	2,174	2,851	2,854	0%
	Southbound	2,972	3,874	3,854	-1%
Hume Highway (east of Cosgrove Road)	Eastbound	1,721	2,714	2,861	5%
	Westbound	2,236	3,064	3,004	-2%
Hume Highway (north of Stacey Street)	Northbound	1,786	1,787	1,791	0%
	Southbound	2,665	2,638	2,646	0%
Roberts Road (south of Norfolk Road)	Northbound	1,937	2,571	2,544	-1%
	Southbound	2,488	2,116	2,186	3%
Wentworth Street (east of Roberts Road)	Northbound	148	221	286	29%
	Southbound	74	109	137	26%

The Preferred Project Report presents an assessment of the implications of the project for road capacity. The outcomes of this assessment are presented in Table 5 and Table 6 for the morning and afternoon peaks, respectively. Impacts on capacity have been measured in terms of saturation (ratio of traffic volumes to design capacity of the road), with saturations of 0.90 and above (highlighted in red) representing saturated traffic capacities. The Proponent highlights from the outcomes of this assessment that a number of roads surrounding the site will be capacity-constrained irrespective of whether the project proceeds. Traffic associated with the operation of the project will not cause any additional roads to be capacity-constrained than otherwise would have been through growth in background traffic and will have a minimal impact on capacity saturation.

Table 5 – Predicted Future Capacity Saturation (Morning Peak)

Location	Direction	Capacity per Hour	Current Situation (2005)	Future Situation (2016)	Future with Project (2016)
Boronia Road (east of Hume Highway)	Eastbound	1,800	0.24	0.39	0.38
	Westbound	1,800	0.22	0.45	0.46
Centenary Drive (south of Barker Street)	Northbound	4,800	0.84	**0.92**	**0.91**
	Southbound	4,800	0.66	0.69	0.71
Cosgrove Road (south of Hume Highway)	Northbound	900	0.48	0.51	0.54
	Southbound	900	0.50	0.52	0.68
Georges River Road (east of Coronation Parade)	Eastbound	1,800	0.77	0.72	0.71
	Westbound	1,800	0.63	0.72	0.74
Hume Highway (west of Centenary Drive)	Northbound	2,900	**1.19**	**1.53**	**1.52**
	Southbound	2,900	0.89	**1.02**	**1.01**
Hume Highway (east of Cosgrove Road)	Eastbound	1,900	**1.29**	**1.74**	**1.73**
	Westbound	1,900	**1.03**	**1.25**	**1.29**
Hume Highway (north of Stacey Street)	Northbound	2,900	**0.90**	0.87	0.87
	Southbound	2,900	0.62	0.60	0.61
Roberts Road (south of Norfolk Road)	Northbound	2,900	0.86	0.89	0.89
	Southbound	2,900	0.65	0.64	0.65
Wentworth Street (east of Roberts Road)	Northbound	900	0.08	0.13	0.18
	Southbound	900	0.27	0.35	0.46

Table 6 – Predicted Future Capacity Saturation (Afternoon Peak)

Location	Direction	Capacity per Hour	Current Situation (2005)	Future Situation (2016)	Future with Project (2016)
Boronia Road (east of Hume Highway)	Eastbound	1,800	0.28	0.32	0.32
	Westbound	1,800	0.24	0.43	0.44
Centenary Drive (south of Barker Street)	Northbound	4,800	0.63	0.76	0.76
	Southbound	4,800	0.78	0.79	0.79
Cosgrove Road (south of Hume Highway)	Northbound	900	0.56	0.61	0.85
	Southbound	900	0.52	0.62	0.59
Georges River Road (east of Coronation Parade)	Eastbound	1,800	0.58	0.58	0.57
	Westbound	1,800	0.73	0.70	0.70
Hume Highway (west of Centenary Drive)	Northbound	2,900	0.75	**0.98**	**0.98**
	Southbound	2,900	**1.02**	**1.34**	**1.33**
Hume Highway (east of Cosgrove Road)	Eastbound	1,900	**0.91**	**1.43**	**1.51**
	Westbound	1,900	**1.18**	**1.61**	**1.58**
Hume Highway (north of Stacey Street)	Northbound	2,900	0.62	0.62	0.62
	Southbound	2,900	**0.92**	**0.91**	**0.91**
Roberts Road (south of Norfolk Road)	Northbound	2,900	0.67	0.89	0.88
	Southbound	2,900	0.86	0.73	0.75
Wentworth Street (east of Roberts Road)	Northbound	900	0.16	0.25	0.32
	Southbound	900	0.08	0.12	0.15

The Preferred Project Report also considers the effects of the project on intersection performance, measured in terms of level of service and average delays. The outcomes of this assessment are summarised in Table 7 and Table 8 for the morning and afternoon peak periods, respectively. The Proponent highlights that irrespective of whether the project proceeds, a number of intersections in the region will be constrained through background growth in traffic volumes. The project will not result in a deterioration in the level of service of these intersections, and with the exception of isolated intersection will not significantly impact on average vehicle delays.

Table 7 – Predicted Future Intersection Operation (Morning Peak)

Intersection	Current Situation (2005)	Future Situation (2016)		Future with Project (2016)	
	Level of Service	Average Delay (s)	Level of Service	Average Delay (s)	LOS Level of Service
Roberts Road/Juno Parade	E	140	F	145	F
King Georges Road/Punchbowl Road	F	>200	F	>200	F
Georges River Road/Coronation Parade	B	17	B	17	B
Roberts Road/Norfolk Road	B	24	B	27	C
Hume Highway/Boronia Road	B	22	B	16	B
Hume Highway/Roberts Road/Centenary Drive	F	>200	F	>200	F
Hume Highway/Cosgrove Road	C	>200	F	>200	F
Hume Highway/Coronation Parade	C	166	F	190	F
Centenary Drive/Arthur Street	C	49	D	54	D
Centenary Drive/Weeroona Road	A	17	B	16	B

Table 8 – Predicted Future Intersection Operation (Afternoon Peak)

Intersection	Current Situation (2005)	Future Situation (2016)		Future with Project (2016)	
	Level of Service	Average Delay (s)	Level of Service	Average Delay (s)	LOS Level of Service
Roberts Road/Juno Parade	D	139	F	138	F
King Georges Road/Punchbowl Road	F	>200	F	>200	F
Georges River Road/Coronation Parade	A	11	A	12	A
Roberts Road/Norfolk Road	B	29	C	37	C
Hume Highway/Boronia Road	B	27	B	27	B
Hume Highway/Roberts Road/Centenary Drive	F	>200	F	>200	F
Hume Highway/Cosgrove Road	F	>200	F	>200	F
Hume Highway/Coronation Parade	B	95	F	89	F
Centenary Drive/Arthur Street	C	49	D	51	D
Centenary Drive/Weeroona Road	A	8	A	9	A

Local Traffic Impacts

A key concern raised in public submissions was the potential for traffic associated with the operation of the project to impact on the local road network. In particular, submissions drew attention to the residential areas of Greenacre, which lie to the west of the project site and between the site and the Hume Highway. There is significant concern that heavy vehicles travelling to and from the site will 'rat-run' through residential areas as means to shorten trips between the site and the Hume Highway.

To address this issue, the Proponent has developed, in consultation with the RTA, a series of local traffic area management measures aimed at preventing or dissuading heavy vehicles from rat-running through Greenacre. In developing these measures, the Proponent indicates that consideration needed to be given to the fact that local traffic and larger vehicles, such as buses, would still require access to, and through, Greenacre. There was also the need to remain cognisant of the fact that certain routes around Greenacre (particularly Roberts Road) could not be completely blocked to through traffic given the existing and on-going operation of other industrial development surrounding the project site. The local area traffic measures established between the Proponent and the RTA are illustrated in Figure 6 and include:

- physical measures to discourage through-traffic across Roberts Road at the intersection of Norfolk Road, with the aim of preventing heavy vehicles leaving the project from directly accessing residential areas, and reducing the desirability of rat-running through those residential areas;
- closure of the median strip on the Hume Highway at Como Road, to prevent heavy vehicles turning right into residential areas on the way to the project;
- traffic calming measures on Rawson Road to reduce the desirability of heavy vehicles travelling along this route between the Hume Highway and the project; and
- stop signs on Noble Avenue at the intersections of Chiswick Road and Northcote Road to reduce the desirability of vehicles rat-running in a north-south direction through residential areas.

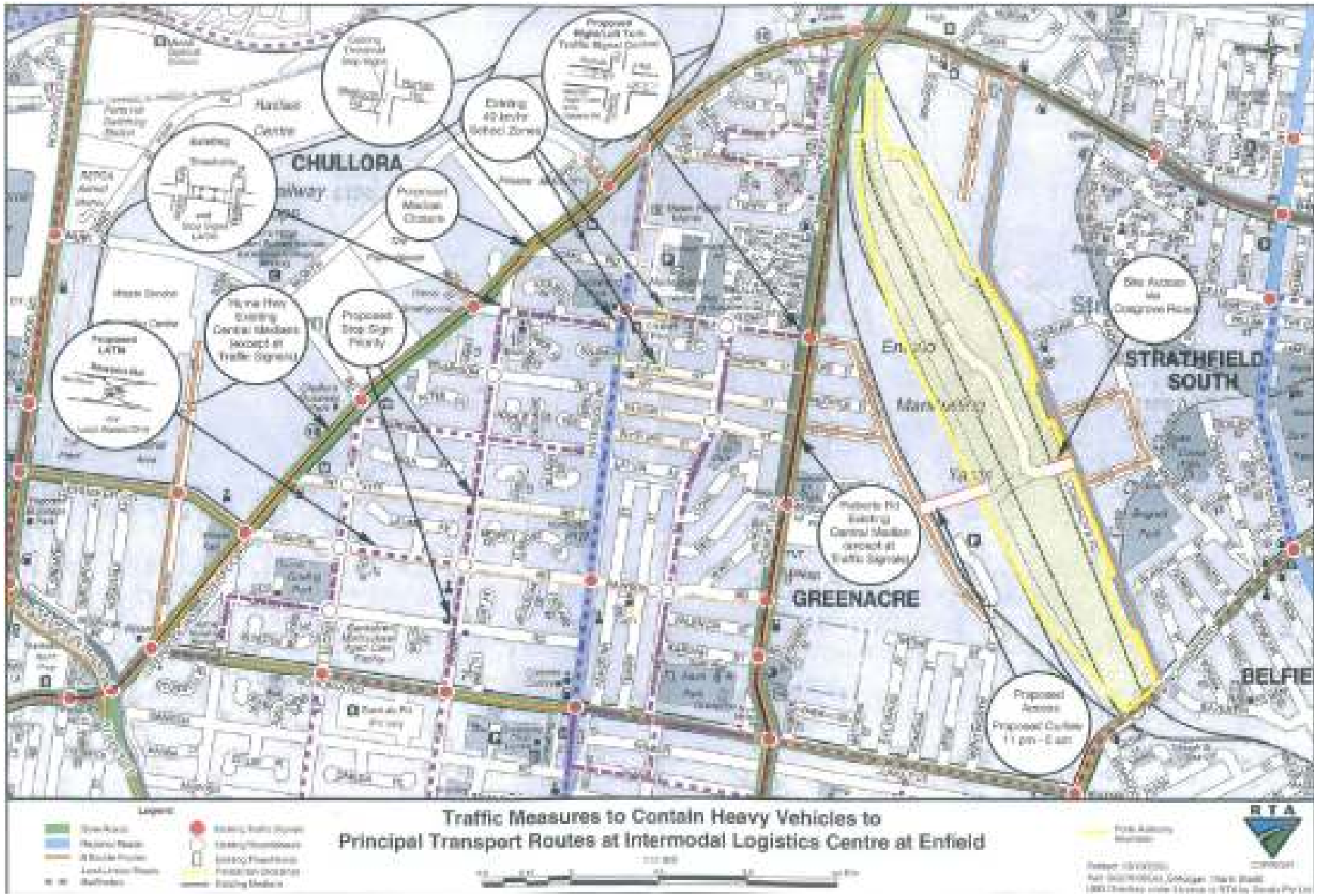
Impacts Related to Train Movements

The Proponent indicates that the project is likely receive an average of 16 train movements per day, within an expected range of 10 to 20 movements per day. The Proponent suggests that these movements would not be in addition to predicted additional rail traffic resulting from the expansion of Port Botany, as outlined in Table 9.

Table 9 - Existing and Future Train Movements

Year/ Origin	Average Daily Train Movements
2005	
Total movements through Enfield	**56**
Comprising:	
Movements to/ from Port Botany	28
Movements to/ from other locations	28
2016	
Total movements through Enfield	**134**
Comprising:	
Movements to/ from Port Botany (stopping at the Enfield project)	16
Movements to/ from Port Botany (other)	78
Movements to/ from other locations	40
2025	
Total movements through Enfield	**166**
Comprising:	
Movements to/ from Port Botany (stopping at the Enfield project)	16
Movements to/ from Port Botany (other)	92
Movements to/ from other locations	58

Figure 6 - Local Area Traffic Management Measures



Submissions

A total of 13.8% of all issues raised in submissions related to traffic and transport impacts. Key issues related to impacts on local and regional traffic volumes and route capacities, as well as a number of submissions raising concern over increase rail movements. In relation to road traffic, key issues raised in submissions are as follows:

- high level of congestion on the existing road network;
- increased heavy vehicle traffic and increased risk of accidents;
- access to and from the site;
- specific impacts to Roberts Road which is already congested;
- increased traffic on residential streets i.e. "rat running";
- requirement that the majority of goods arriving at the site will still require to be transported by road from the site over varying distances to their final destination;
- road condition and maintenance issues;
- adequacy of traffic data and traffic modelling;
- existing intersection performance;
- increase in traffic noise on residential areas;
- air quality deterioration in local area;
- traffic impacts during school finishing times coincident with shift time changes; and
- need for road improvements to be undertaken as part of the proposal.

Bankstown City Council raised a number of concerns about the proposed access to and from the facility, the assumptions behind some of the traffic modelling, the impact on some already under performing intersections, the impact on arterial road congestion and adjoining residential land uses, and the need for State Government commitment to a wider strategy of arterial road upgrading works to support the proposal.

A number of public submissions, principally from the Marrickville local government area, raised issues associated with the increased use of the rail freight line between Port Botany and Enfield and the associated impacts including noise and vibration issues and resultant sleep disturbance. The submission from Marrickville Council indicated concern over the lack of a comprehensive consideration of increased rail movements associated with the project and the Port Botany expansion, and impacts associated with such an increase in rail traffic.

The Roads and Traffic Authority raised a number of issues with respect to the traffic modelling undertaken by the Proponent, to be addressed as part of the Independent Panel process and the Proponent's Preferred Project report. The RTA also recommended that key intersections on routes to and from the project site be upgraded to accommodate swept paths for heavy vehicles likely to use the project.

Consideration

The Department is generally satisfied that the Proponent has undertaken an appropriate level of assessment of traffic and transport related impacts of the project. With respect to road traffic impacts, this view is generally supported by the findings of the Independent Panel. A key consideration of the Panel related to the veracity of the regional traffic model used by the Proponent, and the assumptions applied to model. The Panel's report presents a calibration comparison for the traffic model utilised by the Proponent in the Environmental Assessment and Preferred Project, and the alternative regional traffic modelling undertaken by the RTA. Applying a statistical analysis, the Panel suggests that the Proponent's modelling approach may in fact have achieved a better level of model refinement and calibration in the vicinity of the site than the data generated by the RTA.

Notwithstanding, the Department appreciates that predictive traffic modelling into the future, and as far as 2016 in this particular case, is a complex issue and is based on a number of assumptions that become difficult to predict with absolute certainty. However, the assumptions applied by the Proponent are generally conservative and provide a reasonable basis for assessment of the impacts of the project.

Site Access Arrangements

In its submission, Bankstown City Council presented an alternative site access arrangement and proposed that this alternative would present a superior traffic outcome compared with the Proponent's proposal to direct most traffic west from the site onto Wentworth Road/ Roberts Road. Bankstown Council's alternative involves an egress from the northern corner of the site on to Gould Street, with that street converted to a one-way route to the north on to the Hume Highway. The adjacent Cosgrove Road would also be converted to a one-way street

heading south from the Hume Highway to provide ingress to the site. To achieve access to the site, Gould Street would need to be extended, involving resumption of RTA land currently used as a depot, and potentially all or part of an adjacent, privately owned property. All of the roadworks would occur in the Strathfield local government area.

On preliminary assessment, the Department considered that Bankstown Council's alternative access arrangement had merit, principally as a means of distancing heavy vehicle movements from residential areas and further reducing the potential for rat-running through Greenacre. The Department convened a meeting between the Proponent, the RTA, Bankstown City Council and Strathfield Municipal Council on 8 August 2007 to discuss traffic issues associated with the project generally, including Bankstown Council's alternative access arrangement. At that meeting, a number of impediments to the implementation of Bankstown Council's proposal were identified, including:

1. the Proponent suggested that alternative access arrangement would generate an inferior operational outcome for the project, principally as a result of funnelling internal traffic to a narrower area of the site. Operationally, the Proponent considers that more efficient internal movements would result from access points towards the wider middle section of the site, with the narrower ends of the site to the north and south retained for storage and conservation areas, respectively;
2. the Proponent indicated, with support from the RTA, that the access arrangement proposed for the project would in fact produce a more efficient dispersion of heavy vehicles, compared with the alternative;
3. Strathfield Municipal Council raised concern that the roadworks necessary to implement Bankstown Council's alternative would lie in the Strathfield local government area and would affect roads for which it is currently the appropriate roads authority. Strathfield Municipal Council has neither had the opportunity to consider the impacts of the alternative access arrangement nor to consider whether it would support such an arrangement as the relevant roads authority;
4. Strathfield Municipal Council highlighted that there are a number of existing developments along Gould Street and Cosgrove Road, and there had be no consideration as to whether conversion of these streets to one-way flows would be an acceptable outcome for traffic related to those developments;
5. it was noted that land would need to be resumed to facilitate Bankstown Council's alternative, with associated resumption costs and disruptions. Further, the RTA has not indicated whether it would support or object to use of its land for the purpose of the alternative access arrangement; and
6. it is not clear whether direct access on to the Hume Highway at Gould Street and Cosgrove Road, with intersection upgrades to accommodate necessary swept paths would be practically or economically feasible.

In the context of these outstanding concerns, the Department is unable to support Bankstown City Council's alternative access proposal as a viable option with superior merit to the Proponent's access arrangement. However, the Department has adopted the recommended measures suggested by Council in the event that its alternative access arrangement was not accepted.

Regional Traffic Impacts

It is evident from the information presented by the Proponent in its Environmental Assessment and Preferred Project Report that the road network faces a number of constraints now and in to the future, irrespective of whether the proposed project proceeds. The Hume Highway, and to a lesser extent Centenary Drive, currently operate at or above design capacity as evident from saturation figures above 0.90 (and in some cases, above 1.00). This situation is predicted to worsen from now until the assessment point in 2016, assuming continued traffic growth and no changes to the regional road network. Further, a number of key intersections have low levels of service (in particular, level of service F) and excessive average delay times (>200). Again, these constraints tend to centre around the Hume Highway and are expected to worsen in future.

The issue of regional road network capacity and efficiency is an important issue, but one that is separate from the project application under assessment. As noted, even if the project were not to proceed these constraints would exist and would increase in future as traffic volumes increase. Possible solutions to this situation would require more strategic measures to shift traffic off the road network and/ or enhance the road network to accommodate the growing traffic needs. To this end, the Government is already in the process of planning for, and implementing strategic transport initiatives aimed at addressing traffic constraints. Such measures include the policy to achieve a 40% rail modal split for freight transport, and initiatives to improve public transport through a more efficient train system (clearways projects) and bus priority programs. Further, investigations into enhancement of the metropolitan motorway network may provide alternative, high capacity transport connects to

remove traffic, particularly heavy vehicles from currently-constrained roads. These are issues being tackled by the Government, and relevant transport agencies, and do not rest with the Proponent to resolve.

Despite current and predicted future constraints on the road network surrounding the project site, it is important to note that the project will not have a significant impact on existing or future traffic constraints (which would occur under background traffic growth). In terms of relative traffic volume increases, the project will in most cases lead to traffic increases of less than 5%. For Cosgrove Road and Wenthworth Road/ Roberts Road, the Department concurs with the Proponent's observation that relative increases in traffic volumes on these roads (in the order of 30%) are a consequence of calculation against relatively low background traffic flows.

The project will also have a minimal impact on network capacity saturation and intersection performance. Net increases in saturation and net decreases in levels of service are minimal, and in some cases negligible, as a result of the project. Importantly, the Proponent has demonstrated that the project will not cause any additional routes to exceed acceptable saturation levels, or increase the number of intersections operating at poor levels of service with elevated delay times. In this context, the Department is satisfied that the impacts of the project on the regional road network lie within acceptable limits.

The Department does appreciate that the project will generate the need to upgrade a number of intersections in order to accommodate expected heavy vehicle swept paths. This issue has been recognised by the Proponent and reinforced by the RTA in its submission on the project. The Panel has specifically addressed this issue and has recommended a number of upgrade works, including:

- upgrades to the intersection of Norfolk Road and Roberts Road to accommodate 19-metre and 25-metre vehicles;
- realignment of the intersection of Norfolk Road and Wentworth Street to accommodate 19-metre and 25 metre vehicles;
- improvements to the pavement of Wentworth Steet and Norfolk Road to a standard suitable for 19-metre and 25-metre vehicles;
- increasing the length of the northbound right-turn bay of Roberts Road approaching Norfolk Road; and
- reconstruction of signals at Norfolk Road and Roberts Road to provide split approach phasing.

The Department supports these measures, and the works outlined in the RTA's submission on the proposal, and considers the works necessary in order to achieve safe and acceptable traffic outcomes for the project. As such, the Department has recommended that these works be required as conditions of approval.

Bankstown City Council has also raised concern over the potential for vehicles to turn left out of Wentworth Street onto Roberts Road, and to head south towards Juno Parade. The Proponent has argued that such movements would be contrary to the likely direction of freight markets relative to the site. Notwithstanding, the Department shares Council's concern and considers that its proposal to investigate phasing of signals at this intersection to give priority (more 'green time') to right-turns (over left-turns) to be appropriate. The Department has therefore recommended that this outcome be further investigated by the Proponent in consultation with Council and the RTA.

Bankstown City Council has also raised concern over the use of Juno Parade by heavy vehicles and has suggested the imposition of a load limit on that road to make unlawfully for heavy vehicles to use it. The RTA has confirmed that Juno Parade is a State road and it would be inappropriate to impose a load limit on the road. Notwithstanding, the RTA has indicated its willingness to engage with Council on its concern over the use of Juno Parade as a heavy vehicle route and to consider, as a broader issue separate from the subject application, whether further measures are required to resolve Councils concerns in this regard. The Department notes that this issue is a broader, strategic traffic planning issue and does not consider that specific conditions of approval are necessary for this particular project to facilitate further discussions in relation to Juno Parade.

As an overarching management measure, the Department considers it important for the Proponent to develop and implement an Operation Traffic Management Plan to ensure mitigation, monitoring and management of traffic impacts associated with the project on the surrounding road network. To this end, the Department recommends that the Minister require such a Plan, including provision for specific measures to ensure compliance with the Plan and to ensure that heavy vehicle operators are aware of appropriate access routes. This would include measures to monitor compliance and to implement corrective or preventative actions should heavy vehicle routes not be followed. The Department also considers it important to require continuous improvement processes under

the Plan to ensure additional mitigation and management measures are identified and applied, as appropriate over time.

The Department concurs with the Proponent that construction traffic would not have a significant impact on the surrounding road network. In particular, the Department highlights that construction traffic would be limited in duration. Notwithstanding, the Department has recommended a condition of approval requiring a Construction Traffic Management Protocol to ensure effective management of construction traffic. Key aspects of the Protocol would include management of oversize loads, scheduling of heavy vehicle movements and measures to avoid road use conflicts (during peaks, and with school buses, for example).

Local Traffic Impacts

The Department shares the concerns raised by Bankstown City Council and a significant proportion of community members in relation to the potential for residential streets in Greenacre to be used by heavy vehicles to 'rat-run' between the site and the Hume Highway. The Department considers that the local area traffic management measures developed between the Proponent and the RTA are an appropriate response to this issue, and will serve to make rat-running less desirable to heavy vehicles associated with the project. The Department does not consider it appropriate to require more severe measures at this stage, such as physical barriers preventing access through the streets of Greenacre, noting the need to maintain access for buses and local traffic.

In addition to the measures developed between the Proponent and the RTA, the Department considers that the imposition of a load limit of Karuah Street and Valencia Street in Greenacre would be an appropriate further deterrent to heavy vehicle access. In this manner, heavy vehicle access would be unlawful and would provide an additional mechanism to ensure and enforce compliance.

Given the significance of local area traffic management, and the strong concerns presented in public submissions, the Department considers that periodic auditing of local area traffic management measures is necessary. Such auditing would be fundamental to ensure that the traffic management measures are achieving the intended outcome of dissuading rat-running, and identifying additional measures for implementation, if necessary. The Department therefore recommends that the Proponent be required to undertake a traffic audit once the project reaches capacity of 50,000 TEU, 150,000 TEU and 250,000 TEU. The Department recommends that the audits be undertaken in consultation with the RTA, Bankstown City Council and Strathfield Municipal Council, and in the event that heavy vehicle movements through residential areas are detected, that the Proponent be required to identify and implement additional mitigation measures within appropriate timeframes.

More generally, the Department considers that the success of traffic management measures will depend on active cooperation and consultation between the Proponent and the RTA, Bankstown Council and Strathfield Council. The Proponent has committed to establishing a working group to ensure that traffic-related issues are coordinated and managed between the parties. The Department recommends that this commitment be formerly recognised through the conditions of approval in the form of a Road Transport Coordination Group.

Impacts Related to Train Movements

The Department highlights that irrespective of whether the project proceeds or not, train movements along the corridor between Port Botany and the project site (and beyond) will continue to grow in line with Port growth and market demand. To this end, rail corridor traffic is not expected to be directly affected by the project, although it is recognised that the project will play a relevant part in market forces underpinning this growth in trade.

The rail corridor and upgrades to that infrastructure over time will be able to accommodate expected growth in rail traffic. As such, the Department does not consider that the project will generate any adverse impact with respect to the provision of rail infrastructure capacity or services.

5.2 Noise Impacts

Issue

There are five key issues associated with the project in relation to noise impacts:

- construction noise impacts;
- operational noise impacts;
- sleep disturbance;
- traffic noise impacts; and

- rail corridor noise.

Construction Noise Impacts

The Proponent intends to undertake construction of the project in four phases: site preparation (four months); earthworks and drainage (10 months); road and rail infrastructure (eight months); and warehousing and final works (13 months). It is expected that the total duration of construction works will be in the order of 27 months, and the Proponent intends to undertake audible construction works during the following hours:

- 7:00 am to 6:00 pm, Mondays to Fridays;
- 7:00 am to 6:00 pm, Saturdays; and
- at no time on Sundays or public holidays.

It is important to note from the times above that the Proponent seeks extended construction hours on Saturdays. Common construction times for works on Saturdays are from 8:00 am to 1:00 pm, and the Proponent seeks to double the length of this period.

Table 10 - Predicted Noise Impacts in Each Construction Phase

Location	Noise Goals	Range of Predicted Noise Impacts (dB(A))			
		Phase 1	Phase 2	Phase 3	Phase 4
A1 – Eastern end of Jean Street	54	44-74	65-76	50-72	60-67
A2 – Eastern end of Ivy Street	53	48-60	51-62	51-59	46-55
A3 - 2 Wentworth Street (South)	49	59-66	57-68	49-65	52-62
A4 – Eastern end of Gregory Street	49	48-61	52-62	47-60	47-59
A5 - Western end of Blanche Street	46	66-79	70-81	49-78	65-71
A6 - 40 Bazentin Street	46	57-73	64-75	45-72	56-59

In most cases, the Proponent has predicted that construction noise goals will be exceeded. It suggests, however, that construction noise impacts can be mitigated to a degree, and managed during construction works in a manner than minimises negative effects on surrounding land uses. In particular, the Proponent has indicated that it will manage construction through a construction environmental management, including consideration of measures such as scheduling works, application of equipment silencers, location of equipment, erection of acoustic barriers and noise monitoring/ assessment.

Operational Noise Impacts

The Environmental Assessment for the project presents a derivation of applicable project-specific noise criteria and considers the likely noise impacts of the project relative to these criteria in accordance with the *NSW Industrial Noise Policy*. The noise modelling presented in the Environmental Assessment suggests that noise criteria would be exceeded at most residential receptors, in the absence of noise mitigation measures for worst-case and normal operation scenarios. Unmitigated exceedances were predicted to be in the range 2dB(A) to 18 dB(A) for a range of receptor, meteorological and noise assessment metrics. In the case of sleep disturbance impacts, the Environmental Assessment suggests that under worst-case meteorological conditions, at least half of the residential receptors considered would experience exceedances of sleep disturbance criteria in the order of 2dB(A) to 11 dB(A). Key contributors to noise impacts from the project were identified by the Proponent as idling locomotives on the site and loading/ unloading operations, particularly container forklifts operating in the northern and southern empty container storages.

The Proponent highlights that there are a number of opportunities available to mitigate noise impacts from the project, including at-source noise reductions (for example, mufflers), acoustic barriers and restrictions on the use of public address systems on the site. As examples, the Environmental Assessment suggests that in some cases, the application of noise-reducing mufflers and noise barriers could reduce impacts on receptors by up to 5dB(A) under certain circumstances. The Proponent has argued that committing to further specific noise-mitigation measures at this time would be challenging, given the detailed design of the project has not been undertaken and tenants/ site uses have not been finalised.

In response to issues raised in submissions, particularly comments made by the Department of Environment and Climate Change, and further questions posed by the Independent Panel, the Proponent presented further consideration of noise impacts and potential mitigation as part of its Preferred Project Report. In the first instance, the Proponent has highlighted that the noise impact assessment undertaken for the project was particularly conservative because:

- operations were assumed to be the same during day, evening and night assessment periods. In reality, the Proponent suggests that night-time operations would be unlikely to occur at the maximum capacity and intensity of the project;
- operations were assumed to occur continuously at the maximum capacity and intensity of the project, when in fact it is likely that within any particular noise assessment period there would be periods of maximum activity interspersed with periods of reduced noise-related activity;
- wind direction and speed was assumed to be constant (towards the most-affected residential receptors) for the duration of the noise assessment periods. In reality, wind speed and direction is likely to change over the assessment period and will not be continuously towards the most-affected residential receptors;
- the noise modelling did not take into account acoustic shielding provided by stacked containers on the site. The Proponent has suggested that in some cases, stacked containers may facilitate noise attenuation in the order of 5-10 dB(A);
- the noise modelling did not take into account acoustic shielding provided by industrial buildings surrounding the site, between the project and certain residential receptors.

The Preferred Project Report presents updated noise modelling, taking into account more realistic operational scenarios for the day, evening and night assessment periods, and including noise mitigation measures. A summary of the outcomes of this modelling is presented in the following tables for the three noise assessment periods, under various meteorological conditions and with reference to amenity and intrusiveness criteria. Predicted exceedances of project specific noise levels are highlighted in red.

Table 11 - Predicted Daytime Noise Impacts with Mitigation

Location	Intrusive Noise ($L_{Aeq(15\text{-}minute)}$) (dB(A))					Amenity Noise ($L_{Aeq(period)}$) (dB(A))				
	Criteria	Calm	Wind (W)	Wind (SW)	Wind (NW)	Criteria	Calm	Wind (W)	Wind (SW)	Wind (NW)
A1 – Eastern end of Jean Street	54	43	39	45	37	54	42	38	39	36
A2 – Eastern end of Ivy Street	53	41	36	36	38	52	40	35	35	31
A3 - 2 Wentworth Street (South)	49	35	39	30	44	52	34	38	29	38
A4 – Eastern end of Gregory Street	49	35	47	47	43	52	34	42	41	42
A5 - Western end of Blanche Street	46	39	47	39	**47**	58	38	44	38	41
A6 - 40 Bazentin Street	46	37	43	36	**47**	58	36	46	35	42
A11 - Begnell Park	-	-	-	-	-	50	41	39	42	42
A12 - Matthew Park	-	-	-	-	-	50	35	30	29	29
A13 - Greenacre Bowling Club	-	-	-	-	-	55	27	23	20	27
A14 - Strathfield South High School	-	-	-	-	-	50	36	38	41	31
A15 - St Anne's School	-	-	-	-	-	50	36	42	43	43

Table 12 - Predicted Evening Noise Impacts with Mitigation

Location	Intrusive Noise ($L_{Aeq(15\text{-}minute)}$) (dB(A))					Amenity Noise ($L_{Aeq(period)}$) (dB(A))				
	Criteria	Calm	Wind (W)	Wind (NW)	Wind (N)	Criteria	Calm	Wind (W)	Wind (NW)	Wind (N)
A1 – Eastern end of Jean Street	54	40	36	34	35	49	39	35	33	34
A2 – Eastern end of Ivy Street	52	39	34	36	41	51	39	33	36	35
A3 - 2 Wentworth Street (South)	47	32	37	42	43	53	32	36	36	38
A4 – Eastern end of Gregory Street	47	33	44	41	30	46	32	38	40	29
A5 - Western end of Blanche Street	46	36	42	44	45	50	35	34	38	44
A6 - 40 Bazentin Street	45	34	41	45	45	54	33	37	41	46

Table 13 - Predicted Night Noise Impacts (Intrusive) with Mitigation

Location	Intrusive Noise ($L_{Aeq(15\text{-}minute)}$) (dB(A))					
	Criteria	Calm	Wind (W)	Wind (NW)	Wind (SW)	Wind (SE)
A1 – Eastern end of Jean Street	48	41	37	35	45	**50**
A2 – Eastern end of Ivy Street	47	40	34	37	35	47
A3 - 2 Wentworth Street (South)	42	33	37	42	28	28
A4 – Eastern end of Gregory Street	45	34	45	42	45	34
A5 - Western end of Blanche Street	43	37	39	42	37	32
A6 - 40 Bazentin Street	41	35	41	**45**	34	29

Table 14 - Predicted Night Noise Impacts (Amenity) with Mitigation

Location	Amenity Noise ($L_{Aeq(period)}$) (dB(A))					
	Criteria	Calm	Wind (W)	Wind (NW)	Wind (SW)	Wind (SE)
A1 – Eastern end of Jean Street	42	36	32	30	40	42
A2 – Eastern end of Ivy Street	45	35	30	32	30	39
A3 - 2 Wentworth Street (South)	38	28	33	34	24	23
A4 – Eastern end of Gregory Street	37	29	37	37	37	30
A5 - Western end of Blanche Street	43	32	30	34	32	27
A6 - 40 Bazentin Street	39	30	33	37	29	24

The updated noise modelling suggests that with appropriate physical and operational mitigation measures in place, the project would comply with relevant noise criteria under most conditions. The modelling predicts a number of minor exceedances under adverse weather conditions. Of these, most exceedances are expected to be in the order of 1-2 dB(A), with a single prediction at Bazentin Street approximately 4 dB(A) above the applicable intrusive noise criterion.

Relevantly, the Proponent states in its Preferred Project Report that it is committed to achieving project-specific noise levels for the project. It intends to do so through the implementation of more specific noise mitigation and management measures identified through detailed design, which may include:

- optimisation of the detailed design of noise barriers, earth mounds and fencing in terms of their location, height and lengths;
- use of quieter plant and equipment (where available);
- strategic placement and/ or acoustic treatment of fixed plant and the replacement of PA systems with alternative means of communications on site to avoid noise contributions from such items;
- strategic placement of container stacks on site to provide shielding to nearest residential receptors;
- strategic placement of buildings on site to provide shielding to nearest residential receptors;
- construction of acoustic screens, sheds or canopies (partial enclosures) over noise generating areas;
- working with the rail industry to minimise locomotive impacts within the context of the Rail Working Group for the Port Botany Expansion;
- training and educational programs for employees on how to minimise unnecessary noise at night (eg quiet methods for handling and moving containers etc);
- minimisation of certain operations at night (ie capacity/ operational hours) where such actions would not affect the feasibility of the site's operation;
- management of operations to minimise unnecessary locomotive presence/ idling/ movements;
- monitoring noise levels on site to determine actual noise levels compared to project specific noise levels and to address specific issues; and
- incorporation of all reasonable and feasible physical and management measures into the final environmental management plan for the operation of the site.

Sleep Disturbance Impacts

The Environmental Assessment presents an assessment of potential sleep disturbance impacts associated with the project, the results of which are summarised below. Predicted exceedances of applicable sleep disturbance criteria are highlighted in red.

Table 15 - Predicted Sleep Disturbance Impacts

Location	Sleep Disturbance Noise ($L_{A1(1\text{-minute})}$) (dB(A))			
	Criteria	Calm and Isothermal	Wind (W)	Wind (SE)
A1 – Eastern end of Jean Street	58	**60**	56	**69**
A2 – Eastern end of Ivy Street	57	42	36	51
A3 - 2 Wentworth Street (South)	52	39	43	33
A4 – Eastern end of Gregory Street	55	50	**65**	51
A5 - Western end of Blanche Street	53	**61**	**68**	**56**
A6 - 40 Bazentin Street	51	51	**61**	45

In response to concern raised in submissions in relation to sleep disturbance impacts, and in response to requests for additional information from the Independent Panel, the Proponent presented further analysis of sleep disturbance events as part of its Preferred Project Report. The additional analysis considers the frequency of short-duration, elevated noise impacts for the period 10:00 pm to 6:00 am. The analysis indicates that the greatest impacts during this period are between 10:00 pm and 11:00 pm, and then again from 5:00 am to 6:00 am. Importantly, the Proponent predicts there would be minimal events from 11:00 pm to 3:00 am, and none in the period 3:00 am to 4:00 am (the most significant period for potential sleep disturbance).

Further, the Proponent notes that peak sleep disturbance events occur in the period 2:00 am to 4:00 am, and it is in this period that background noise increases by 5-10dB(A) compared with background noise during the rest of the night. Given that sleep disturbance criteria are based on background noise levels, the Proponent suggests

that there is an argument that sleep disturbance criteria during this period could be similarly increased by 5-10dB(A). This 'correction' would result in compliance with sleep disturbance criteria in most cases for the period 2:00 am to 4:00 am.

Traffic Noise Impacts

The Environmental Assessment for the project highlights that the *Environmental Noise Control Manual* specifies day and night road traffic noise criteria of 60 dB(A) and 55 dB(A) respectively for freeways and arterial roads (such as Roberts Road and the Hume Highway). It also notes that these criteria are already exceeded and that background road traffic noise will continue to be above these levels in to the future (and in particular, up until 2016 when the project is predicted to reach peak capacity). In these circumstances, the *Environmental Noise Control Manual* requires that a new traffic-generating development should not increase background traffic noise levels by more than 2 dB(A).

The Proponent's assessment of road traffic noise continues future scenarios (2016) with and without traffic generated by the project, to illustrate a worst-case traffic noise scenario. In this context, the Proponent notes that normal growth in background traffic until 2016 will provide a worst-case traffic noise environment, and full-capacity operations of the project by 2016 will generate a maximum traffic noise contribution. Outcomes of the traffic noise assessment undertaken by the Proponent are summarised in Table 16 below.

Table 16 - Predicted Road Traffic Noise Impacts (2016)

Nearest Affected Residences	Day (7:00 am to 10:00 pm) $L_{Aeq(15\text{-}hours)}$ (dB(A))			Night (10:00 pm to 7:00 am) $L_{Aeq(9\text{-}hours)}$ (dB(A))		
	Criteria	Without Project (2016)	With Project (2016)	Criteria	Without Project (2016)	With Project (2016)
A7 - 554 Liverpool Road	73	71	72	69	67	69
A8 - 1 Hume Highway	72	70	71	69	67	66
A9 - 20 Rebecca Road	74	72	72	71	69	69
A10 - 118 Roberts Road	72	70	70	69	67	67

From the data presented above, it is important to note that traffic noise levels without the project are expected to be elevated. With the addition of project-related traffic, there is generally no discernible increase in road traffic noise at most receptors considered. Liverpool Road and Hume Highway receptors are expected to receive no more than a 1 db(A) increase in daytime road traffic noise as a result of the project, and in the case of Liverpool Road alone, not more than 2 dB(A) increase at night.

Rail Corridor Noise

The Environmental Assessment for the project relies, as did the Environmental Impact Statement for the Port Botany Expansion, on assessments of rail corridor noise previously undertaken by RailCorp. These assessments considered an increase in rail traffic from the expanded Port, and concluded that noise outcomes could be acceptably managed.

Submissions

Concern over noise impacts represents 10.9% of all issues raised in submissions. Key concerns raised in submissions relate to noise and vibration impacts, not only from the construction and operation of the proposed project but also regarding the increased traffic on the local road network from proposed operations and increased usage of the freight line between Port Botany and Enfield. Specific issues that were raised included:

- there is already too much noise in the area;
- increased noise level from 24 hour operations (including noise from truck movements on site, train noise, movement of containers and container positioning);
- no noise barrier is proposed on the Roberts Road side of the site;
- no measures are proposed to ameliorate noise for residents living near the freight line;
- no information provided on impacts from increased train numbers of the freight line;
- sleep disturbance issues;
- locations for noise monitoring of concern as the locations proposed (Hume Highway and Cosgrove Road) are subject to traffic noise at night;
- noise and vibration impacts from trains on the freight line; and

- residents should be compensated for increased noise levels.

Both the DECC and NSW Health raised concern with respect to noise impacts, particularly the potential for sleep disturbance.

Consideration

Construction Noise Impacts

The Department is generally satisfied that the Proponent has adequately assessed the potential construction noise impacts associated with the proposed project. In this regard, the Department notes that the noise modelling undertaken by the Proponent is conservative, and that there may be potential to further reduce noise impacts through careful scheduling and management of construction activities.

Notwithstanding the conservative nature of noise modelling and predictions, the Department highlights that there will likely be periods of elevated noise during certain phases of construction. While these noise impacts lie above construction noise goals, it is important to note that construction noise will be of limited duration and transient in nature. It is not expected that construction noise will continuously exist at peak levels predicted in the Proponent's noise assessment and there is reasonable potential to manage construction works to provide for periods of respite, with the most intensive works scheduled to avoid coincident high-noise activities. In this context, the Department considers it appropriate to apply a management approach to construction noise impacts, with the aim of minimising such impacts wherever possible. The Department therefore recommends that the Minister require the Proponent to prepare and implement a Construction Noise Management Plan to give effect to a proactive and reactive construction noise management approach.

Given that construction noise impacts are predicted to be elevated in some cases, the Department does not consider it appropriate to acquiesce to the Proponent's request for extended construction hours on Saturdays. The Proponent has argued that extended construction hours are important to ensuring timely completion of construction works, without which the total duration of construction noise would be extended. While the Department does not disagree with the Proponent's argument in this regard, it does not consider that this is sufficient reason to remove weekend respite periods and to allow longer weekly periods of elevated noise, albeit at potentially lower levels (if, for example, these longer construction periods permit distribution of noisy works to reduce peak noise impacts overall). Importantly, the Proponent has not demonstrated that extended construction hours would relieve peak noise impacts, or permit noise goals to be achieved. Therefore, the Department recommends that the Minister impose standard construction hours on the project, with the ability for the Director-General to agree to limited works outside of those hours, on a case-by-case basis, and in exceptional circumstances (for example, longer-duration concrete pours and similar works).

Operational Noise Impacts

It is important to note from information provided by the Proponent, particular in its Preferred Project Report, that project-specific noise limits are ability to be met by the project with careful consideration of noise mitigation. From the noise assessment presented in the Preferred Project Report, it is clear that in the majority of cases, applicable noise criteria can be met, with the exception of limited predicted exceedances under adverse weather conditions. These minor exceedances are expected to generally be in the order of 1-2 dB(A) (with a single predicted exceedance of 4dB(A) under the most extreme conditions) and within the limits of certainty inherent in the noise modelling methodology. The Department considers that there is reasonable potential for the Proponent, during detailed design, to further consider this issue and to design and develop the project in manner that ensures full compliance with noise criteria. Further, it is noted that the Proponent has committed to achieving these noise outcomes.

This position is shared by the Independent Panel, which indicated that the applicable noise criteria for the project, derived in accordance with the *NSW Industrial Noise Policy*, should be applied to the project without alteration. The Panel also makes specific reference to the Proponent's commitment to meeting these noise outcomes.

Since its Preferred Project Report, the Proponent has argued that it requires design flexibility and it is not possible to commit to specific noise mitigation measures until such time as detailed design is complete and site tenants are identified. As a consequence, the Proponent has argued that a number of noise limits should be increased to provide necessary design flexibility. The noise limit increases suggested by the Proponent are generally in the order of 1-2 dB(A) at isolated receptors during the day and evening periods, and 4dB(A) for a number of receptors at night. While the Department generally does not consider these increases to be significant, it does

not consider the increases to be acceptable given that the Proponent has demonstrated that the base criteria can be met in most cases. Where noise modelling has predicted potential exceedances, the Department considers that the conservative nature of the noise modelling and the potential for detailed design to include additional noise mitigation provides sufficient weight against the Proponent's request. As such, the Department recommends that the Minister impose noise limits on the project in strict accordance with the *NSW Industrial Noise Policy*, with no additional leniency permitted. This approach has been reflected in the recommended instrument of approval.

Given that the Proponent has identified that noise contributions from locomotives and mobile plant and equipment are key contributors to the noise impacts of the project, the Department has recommended specific conditions of approval to address these factors. Firstly, the Department recommends that the Proponent be required to install efficient silencers and low-noise mufflers, and to replace reversing alarms with alternative measures (such as flashing lights), wherever possible. The Department recognises that the Proponent may not be able to control noise mitigation that may be applied to locomotives. Notwithstanding, it is important to reinforce that noise contributions from locomotives that may be located on the site must be considered as if they were stationary noise sources from the rest of the project. The Department therefore recommends that the Minister impose a condition of approval that explicitly includes noise from locomotives as a contributor to project noise, to be measured against the noise criteria established for the project as a whole.

To ensure that noise predictions are met, and that noise criteria are achieved, the Department recommends that the Proponent be required to undertaken confirmatory noise auditing during the development of the project. In particular, the Department recommends that noise audits be undertaken once the project reaches 50,000 TEU, 150,000 TEU and again at 250,000 TEU. Staging of noise auditing in this manner will allow the Proponent to extrapolate noise predictions and to potentially predict if increasing capacity will generate noise problems or exceedances of noise criteria prior to the attainment of the ultimate capacity of the project. Should any such audit identify noise impacts about predictions or stipulated noise criteria, the Proponent would be required to identify and implement additional noise mitigation measures to bring the project into noise compliance. The Department considers that this is an effective mechanism to protect local acoustic amenity and to ensure that acceptable noise outcomes are achieved.

The Department also considers it of fundamental importance that noise issues are effectively managed throughout the life of the project. The recommended conditions of approval therefore include a requirement for the Proponent to prepare and implement a comprehensive Noise Management Plan for the project. The Plan would provide an overarching management framework to ensure that the Proponent proactively and reactively manages noise during operation, including effective mitigation, monitoring and management approaches.

Sleep Disturbance Impacts

Advice provided by the Independent Panel suggests that based on the updated and more detailed analysis included in the Proponent's Preferred Project Report, the maximum noise levels generated by the project are manageable.

The Department tends to agree with the Panel's finding, and in particular notes that the Proponent's assessment indicates that key sleep disturbance issues would result during concurrent:

- activities on the site, principally during the periods 10:00 pm and 11:00 pm, and then again from 5:00 am to 6:00 am; and
- adverse weather conditions, particularly wind towards residential receptors.

As the Proponent has reinforced, night time operations are limited in scale are represent no more than approximately 13% of the capacity throughput of the project (at full 300,000 TEU capacity). This fact, coupled with the frequency of adverse weather conditions and the conservative nature of noise modelling suggests that the potential for sleep disturbance is a matter that could be readily managed by the Proponent with sufficient forethought and care. The Department recognises that management of potential sleep disturbance would be challenging and would require the Proponent to develop comprehensive and proactive mechanisms to address these impacts. Such an approach could be developed as part of the Noise Management Plan required under the recommended conditions of approval.

In addition, the Department highlights that the Proponent has consistently reinforced as part of its noise assessment that detailed design of the project has yet to be undertaken and final noise mitigation measures have yet to be established. Based on this advice from the Proponent, the Department suggests that there is further

potential for the Proponent to mitigate sleep disturbance impacts through the detailed design process, in addition to the abovementioned management approach.

Traffic Noise Impacts

As with the broader regional traffic context for the project, traffic noise is already elevated along major regional roads. Whether or not the project proceeds or not, existing traffic noise is above, and will continue to be above, recommended traffic noise goals. It is clearly not the responsibility of the Proponent to address this existing impact, despite claims to the contrary in a number of submissions. As previously noted, Government is working towards improved and more environmentally-sustainable transport options for Sydney, which as a result are likely to address on-going traffic noise issues in a more strategic context.

Relevantly for the proposed project, traffic generated from the site is not expected to increase existing traffic noise levels by more than 2 dB(A). This is the established assessment standard for traffic-generating developments with elevated background road traffic noise, and the Proponent has demonstrated that this outcome can be met.

Rail Corridor Noise

The Department tends to agree with arguments put forward in submissions, particularly by Marrickville Council, that the Proponent cannot reasonably and entirely separate the project from rail noise impacts along the corridor between Port Botany and Enfield. As Council notes, although the project post-dates the consideration and approval of the Port expansion, it will be an inherent component of the market drivers contributing to greater rail demand and increased rail movements. If the project were not to proceed, the Department concurs with the Proponent that rail traffic is likely to increase regardless, based on expanded trade through the Port. However, there is potential for the operation of the project to influence rail demand, thereby increasing rail corridor usage at a greater rate than may be expected in the absence of the project.

The Department recognises that rail corridor noise is an existing issue, and a very real and genuine concern for residents and councils along the corridor. Marrickville Council has articulated these concerns well as part of its submission, and the Department generally agrees with Council that a more strategic and holistic approach needs to be taken to address rail noise. In this regard the Department has been actively contributing to, and supporting the DECC in the preparation of *Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects* (DECC, 2007) and rail noise/ land use policy more generally. In the meantime, the Department notes that the rail operations are licensed by the DECC, with recognition of the need to address key areas of elevated rail noise impacts across the network. The Department considers that this approach, including the suite of proposed mitigation works are an appropriate means to address rail noise impacts at this time. A number of working groups have been established to coordinate rail issues between the Port and Enfield more generally, and there is potential for these groups to address noise-related issues from time to time, if necessary.

5.3 Heritage Impacts

Issues

Given the historical use of the site for rail-related uses, there are a number of significant heritage items currently located on the proposed project site. The Environmental Assessment identifies two items of State heritage significance: the Tarpaulin Factory and the Pillar Water Tank. It also identifies an additional three items of local heritage significance: the Pedestrian Footbridge, Wagon Repair Shed and Yard Master's Office. All other remaining structures on the site are not considered to represent significant heritage values. In particular, the Environmental Assessment highlights that the DELEC and Wheel Lathe area is not of heritage significance.

With the exception of the Tarpaulin Factory, all other items of heritage significance are currently located in areas of the site earmarked by the Proponent for redevelopment. The Tarpaulin Factory is currently located within the conservation area proposed by the Proponent at the southern end of the site, and it is proposed that this structure would be retained in-situ. The Proponent intends to either stabilise and retain the Tarpaulin Factory on the site, or to perhaps dismantle it and relocate it to an off-site heritage organisation. If retained on-site, the Proponent has identified that there is potential for future, appropriate use of the Factory for commercial or public service functions. The Proponent suggests that the other item of State heritage significance could be relocated on the site, or dismantled and sent to an off-site heritage society.

The Environmental Assessment indicates that the three items of local heritage significance (Pedestrian Footbridge, Wagon Repair Shed and Yard Master's Office) are all in varying states of disrepair and are generally

degraded. Of these items, the Pedestrian Foobridge (with only 80 metres of the original 120-metre length of the Bridge remaining) could potentially be stabilised and relocated on the site, if practical. The Wagon Repair Shed and Yard Master's Office are in such poor condition that the Proponent suggests that the most appropriate option is demolition. The heritage values of these items would be recorded prior to demolition.

Submissions

Submissions relating to heritage impacts were received from the Strathfield Historical Society, Strathfield Municipal Council and the NSW Heritage Office. A number of public submissions also commented on issues of heritage significance and the need to reflect and retain connections to the historical use of the site.

Strathfield Council highlighted that the entire Enfield Marshalling Yards are an important heritage item of significance, illustrating the history and former use of the site. Council argued that items such as the Administration Building and Yard Masters Office on the site should also be retained. It also suggested that the Tarpaulin Factory is not well regarded by local residents and it would be possible to located all or part of this structure without substantial loss of heritage value.

The Strathfield Historical Society suggested in its submission that the Administration Building, Yard Master's Office and Tarpaulin Factory should be retained on-site.

The submission received from the NSW Heritage Office indicated a need to more fully understand the intended adaptive reuses of the Tarpaulin Factory and Pillar Tank in the context of retaining their State heritage significance. It also suggested that the Pedestrian Footbridge and Wagon Repair shed should be ideally retained on-site. With respect to the Yard Master's Office, the Office raised no object to its demolition provided its heritage values were appropriately recorded before removal. The Heritage Office also cautioned that there may be other, as yet undiscovered, items of heritage significance on the site.

Consideration

The Department is generally satisfied that the Proponent has undertaken an adequate level of assessment of the potential heritage impacts of the project. As a basic principle, the Department considers that heritage items of significance should be retained on site wherever possible, and restored/ stabilised to ensure on-going protection of heritage values.

In this context, the Department supports the Proponent's proposal to retain and manage the Tarpaulin Factory within the ecological area at the southern end of the site. The Department recommends that the Minister impose conditions of approval that explicitly state the need to retain this item, and to ensure necessary stabilisation works are undertaken in consultation with the NSW Heritage Office. Future use of the Factory for uses such as commerce or community facilities would require separate approval in accordance with the *Environmental Planning and Assessment Act 1979*.

While the Proponent has been equivocal about whether the Pillar Water Tank (the second State significant heritage item on the site) would be retained or removed, the Department considers it of particular importance that this item be retained and protected on-site. It is therefore recommended that the Minister require retention of the Pillar Water Tank on-site, with an appropriate location (most likely within the southern portion of the site, with the Tarpaulin Factory) to be established in consultation with the NSW Heritage Office. Given the reasonably good state of the Pedestrian Footbridge, the Department also recommends location of the Footbridge within the site, in consultation with the NSW Heritage Office, instead of relocation off-site.

The degraded states and lower heritage significance of the Yard Master's Office, the Administration Building and the Wagon Repair Shed are consistent with the Proponent's proposal to demolish these items. Notwithstanding, the Department supports the need identified in a number of submissions to properly record the heritage values of these items before demolition. The recommended instrument of approval reflects this outcome, and requires the Proponent to engage a qualified heritage expert to prepare archival recordings of the items in accordance with NSW Heritage Office guidelines. The archival recordings would be deposited in the Strathfield Public Library, or similar appropriate location.

5.4 Air Quality Impacts

Issue

The Environmental Assessment presents an assessment of the potential dust impacts associated with the construction of the project. Initial modelling undertaken by the Proponent assumes the application of standard construction dust mitigation measures, including sealing of haul roads, use of wind breaks and application of water sprays. Under these conditions, the modelling presented in the Environmental Assessment predicts minor exceedances of the applicable 24-hour PM_{10} criterion at residential properties, particularly those in proximity to the southern end of the site. Revised modelling indicates that this potential exceedance could be resolved by restricting the timing and intensity of construction works near the southern end of the site. The Proponent has committed to implementing construction management measures to ensure that the timing and intensity of construction works are proactively managed to ensure that acceptable ambient dust outcomes are achieved.

Operation of the project will not generate air quality impacts from traditional point sources (eg stacks), but has the potential to impact on air quality through emissions from locomotives and fuel-burning equipment on the site. An assessment air quality impacts, particularly in relation to oxides of nitrogen and particulate matter, has demonstrated compliance with applicable ambient air quality criteria. The Proponent's assessment concludes that:

- maximum hourly NO_2 concentrations at the nearest receptors are predicted to be 171-190 μgm^{-3} (including a maximum background concentration of approximately 96 μgm^{-3}), which compares favourably to an ambient air quality standard of 246 μgm^{-3}; and
- maximum daily PM_{10} concentrations at the nearest receptors are predicted to be 38-46 μgm^{-3} (including an average background concentration of approximately 18-28 μgm^{-3}), which compares favourably to an ambient air quality standard of 50 μgm^{-3}.

Submissions

A large number of submissions related to community concern and potential air quality impacts and associated health issues. The issues that were raised included the generation of dust during construction, general air pollution as a result of increased traffic and increased use of the freight line and the effects of diesel operations. Both the DECC and NSW Health raised air quality as one of their main concerns about the project, particularly the generation of dust during the construction period.

Specific issues raised in the submission regarding air quality and health impacts included:

- increased petrol and diesel fumes from increased truck movements;
- a high incidence of asthma, cancer and related illnesses already exists in the area;
- extra pollution will affect asthma and allergy sufferers;
- extra dirt, grime and dust will be produced from increased truck and train movements leading to reduced air quality.

Consideration

The Department has reviewed the air quality impact assessment undertaken as part of the Environmental Assessment and is satisfied that an adequate assessment has been undertaken. The Proponent has indicated that a number of mitigation measures would be implemented to control the generation of dust during construction of the project. The Proponent has also indicated that dust impacts will also be managed via a real-time PM_{10} monitoring program which would advise the construction contractor of any dust impacts within sensitive receiver locations if and when they occur. The contractor will then be able to alter construction works to ensure that impacts are managed without any exceedance of the criteria.

The Department considers that provided all the nominated environmental commitments are implemented during the construction and operational phases of the project the resultant air quality impacts from the proposal would be negligible. Notwithstanding this, the Department believes the Proponent should be required to undertake background air quality monitoring prior to the commencement of any construction activities and to maintain this program throughout the construction and operational phases of the project and has stipulated this requirement as a recommended condition of approval. The Department has also recommended that annual reports detailing the results of the monitoring program are required to be submitted to the Department to outline the air quality performance of the project as detailed in the conditions of approval.

The Panel states in its report that it is generally satisfied that the project is unlikely to have any significant air quality impacts during operations. The Panel states that the assessment of air quality impacts from increases in off-site vehicle traffic due to the operation of the project indicates only marginal increases of PM_{10} and NO_2 concentrations. The Department is satisfied that the mitigation measures proposed by the Proponent are adequate for the project.

6. CONCLUSIONS AND RECOMMENDATIONS

The Department has assessed the EA, Statement of Commitments, Preferred Project Report, submissions on the proposal, and the independent report prepared by the IHAP constituted for the project and is satisfied that the impacts of the proposal can be mitigated and/or managed to ensure an acceptable level of environmental performance.

The development of intermodal terminals across the Sydney metropolitan area is critical to the efficient movement of freight by rail. The project is consistent with the spirit and intent of current State Government strategic and freight planning objectives and provides a mechanism to contribute to the Government's commitment to move 40% of freight containers in and out of Port Botany by rail by 2011. In addition, the Environmental Assessment estimated that the operation of the project would eliminate up to 100,000 truck movements and shorten another 250,000 truck movements between the western suburbs and Port Botany providing an annual saving of 6.5 million vehicles kilometres during peak operations (translating to a saving of up to $5.5 million per annum in vehicle operating costs and up to $390,000 per annum in accident costs).

A number of environmental commitments have been outlined to ensure that the project would not result in any significant impacts to the surrounding environment. With these measures implemented during construction and operation, the project would not have any significant impact to the surrounding environment. The implementation of the mitigation measures proposed as part of the Statement of Commitments provided in the Environmental Assessment together with the recommended conditions of approval would ensure that any potential impacts are minimised to an acceptable level and the project does not unduly impact on the surrounding community. In addition, the Department has recommended that the proposal be staged to ensure that mitigation measures are effectively in place during operation of the project and to ensure that as capacity of the project increases, the surrounding community is not adversely affected.

The Department believes that the proposed project will provide a genuine long term requirement for intermodal capacity close to the centre of Sydney. The proposed ILC site is located on the existing freight line and is strategically located within an established market area. The project would provide extra capacity to accommodate a modal shift from road to rail. The current level of freight moved from Port Botany by rail is around 20% and the Government has set a goal to have this level increased to 40% by 2011. As stated above, the proposed ILC at Enfield will contribute to the achievement of this goal as will other intermodal terminals that may be developed in the future.

APPENDIX A – RECOMMENDED CONDITIONS OF APPROVAL

APPENDIX B – STATEMENT OF COMMITMENTS

APPENDIX C – PREFERRED PROJECT REPORT

APPENDIX D – INDEPENDENT PANEL'S REPORT

APPENDIX E – ENVIRONMENTAL ASSESSMENT