Submission in Reply to the Commission of Inquiry

Proposal by Sydney Ports Corporation to construct and operate a new container terminal and associated infrastructure at Port Botany in the City of Botany Bay local government area

Department of Infrastructure, Planning and Natural Resources

February 2005
EXECUTIVE SUMMARY

INTRODUCTION

This report presents the Department of Infrastructure, Planning and Natural Resources’ submission in reply to the Commission of Inquiry into the proposal by Sydney Ports Corporation to construct and operate a new container terminal at Port Botany in the Botany Bay local government area. The report focuses on the key issues that, during the Inquiry process, the Department highlighted as requiring further consideration before its assessment of the proposed development could be finalised. These issues can be summarised as:

- Strategic context
- Environmental and amenity impacts
- Justification of the proposal, with particular regard to port capacity and alternative layouts.

Strategic context

Subsequent to the primary session of the Inquiry, additional information has become available concerning the proposal’s strategic context. In particular, the Government has released Stage 1 of its Port Freight Plan. The Department now considers the proposal to facilitate 3.2 million TEUs per annum throughput at Port Botany is justified within a strategic context for three reasons:

- The proposal would ensure that Sydney meets the need to accommodate predicted growth in container trade and strengthen the role of Sydney as a global city;
- The proposal is consistent with the objectives of the NSW Ports Growth Plan, Towards a Strategy for Botany Bay, current work being undertaken into the development of the Metropolitan Strategy and Stage 1 of the Port Freight Plan for Sydney; and
- Government has made public its strategic planning commitments to address the infrastructure and related implications of the forecast 3.2 million TEUs of container trade through Port Botany.

The Department supports the need for an increase in throughput capacity to 3.2 million TEUs per annum. The Department notes that beyond 2025 throughput capacity at Port Botany may further increase to meet Sydney and NSW’s expected growth. Such further increase should, however, be the subject of further assessment, particularly with regard to broader infrastructure implications.

The Department submits that, with the recently announced Port Freight Plan, the Commissioner should be satisfied that the Government is committed to appropriate strategic measures which complement and facilitate the orderly implementation of the increase throughput in capacity of up to 3.2 million TEUs at Port Botany.

A failure to provide a throughput of 3.2 million TEUs per annum at Port Botany will have serious implications to the State’s economy. The Department’s view is that a “do nothing” option poses a high risk to the state and national economy and is therefore not in the public interest.

Environmental and amenity issues

In its primary submission, the Department highlighted a number of key areas for which it required further information from the Applicant before finalising its assessment. The Department drew particular attention to the environmental impacts on Penrhyn Estuary and to the impact of the proposal on operational aviation issues associated with the port’s proximity to Sydney Airport.

As a result of additional information provided by the Applicant the Department considers that, with the adoption of appropriate mitigation and management measures, the environmental and amenity impacts of the proposal could be managed. For example, for Penrhyn Estuary the Department recommends a number of measures relating to the ongoing monitoring, management and maintenance of the proposed enhancement works. However, if the enhancement works are not successful, the Department supports a contingency plan, with the provision of compensatory habitat.

In terms of operational aviation issues, the Department is informed that progress is being made to resolve the outstanding issues relating to aviation operations at Sydney Airport, with a project plan currently being developed by AirServices Australia in conjunction with Sydney Ports. However, due to the uncertainties which surround the certification process, the Department recommends that
Prior to a determination by the Minister, there be a requirement for an in principle agreement between the parties that the aviation issues can be satisfactorily resolved; and

If approved, construction may not commence until details regarding the steps and timeframe for resolution of aviation issues, including certification, be provided to the Minister.

Details of outstanding environmental and amenity issues, the Applicant's response and the Department's final assessment of those issues are contained in Appendix A. A number of recommended measures to address residual impacts are indicated in section 3 of the report (as the basis of conditions of approval as applicable).

**Justification of the proposal**

As indicated in its primary submission, the Department considers that Port Botany is essential both to the growth of Sydney as a global city and to the maintenance of the State and national economy. Consistent with the NSW Ports Growth Plan, Port Botany will continue to be the key NSW port in coming decades and therefore needs to be able to efficiently accommodate the anticipated growth in container trade (to approximately 3.2 million TEUs per annum by 2025).

The critical issue which the Department highlighted in its primary submission – and which it is concerned to highlight in this report – is whether the proposal is the most appropriate option for achieving a capacity of 3.2 million TEUs. This issue relates both to alternative layouts within Port Botany and to the container capacity of the current and any future port footprint.

**Relationship between port container capacity and intermodal terminal capacity**

The Department considers that any consideration of the development of intermodal terminals in the metropolitan area, while important to the strategic context, is not relevant to the issue of the justification of the port expansion. In particular, a proposal by Sydney Ports to develop an intermodal terminal at Enfield – not, it should be noted, an inland port – should not affect consideration of the port expansion proposal before the Inquiry. It should be noted that intermodal terminals do not operate as storage areas for the port and are not substitutes for port capacity.

**Alternative layouts**

The Department has given further consideration to alternative proposals within Port Botany. It recommends that the option referred to as Option 8 (see Appendix D) should be recommended as the appropriate footprint for future port expansion. The advantages of Option 8 are:

- its reduced environmental impacts on Penrhyn Estuary; and
- its provision of appropriate land based infrastructure to cater for mid to long term demand, without necessarily compromising investment in technology by private operators if they wish to do so.

As previously indicated, the Department does not support the do-nothing option because of the uncertainties involved in the timing and extent of private sector investment and the need to ensure the land is available to accommodate growth, provide infrastructure support (rail sidings etc.) and ensure ongoing port competitiveness.

The Department recommends a staged development for the port. Stage 1 would involve approval for the common elements between Option 1 (proposed layout) and Option 8 while determination of Stage 2 (the remainder) would be deferred pending further assessment of the proposed fifth berth on the eastern extension to Brotherson Dock. The staged development will also take into account the limit of 3.2 million TEUs per annum. Further details are provided in section 3.

**CONCLUSION**

The Department accepts that there is a clear justification for Port Botany to accommodate a throughput of 3.2 million TEUs per annum by 2025 and the implications of not facilitating this container throughput will have ramifications for the competitiveness of the NSW economy. The Department is satisfied that the proposed expansion of Port Botany to accommodate this throughput is consistent with the objectives of the NSW Ports Growth Plan and current work being undertaken into the development of the Metropolitan Strategy and the Port Freight Plan for Sydney.

With respect to environmental and amenity impacts, following the submission of additional information and clarification during the course of the Inquiry, the Department is now satisfied that the
residual impacts of the Applicant’s proposal could be managed with the adoption of appropriate mitigation and management measures.

The Department has given further consideration to the alternative layouts for the proposed expansion at Port Botany. It recommends that Option 8, as indicated in Appendix D, be recommended as the footprint for port development on a staged development basis.

The Department considers that the Commission has adequate and appropriate information to conclude its advice to the Minister.
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1 INTRODUCTION

In accordance with section 119 of the Environmental Planning and Assessment Act 1979, the Minister for Infrastructure and Planning directed that a Commission of Inquiry (COI) be held into all environmental aspects of a proposal by Sydney Ports Corporation to construct and operate a new container terminal at Port Botany in the Botany Bay local government area.

This report presents the Department's submission in reply to the Inquiry. The submission focuses on the key issues that, during the Inquiry process, the Department highlighted as requiring further consideration before its assessment of the proposed development could be finalised (refer to section 2). The Department's responses to questions posed by various parties after the primary session are also provided in this report (Appendix C). In particular, the report provides the Department's position on the proposal in light of submissions and information received during the course of the Inquiry.

2 KEY MATTERS RAISED AT THE PRIMARY SESSION OF THE INQUIRY

The Department's primary submission and presentation to the Commission of Inquiry indicated that there were three key issues requiring further consideration before the Commission could reasonably form a view in relation to the proposed expansion. These issues can be summarised as:

1. Strategic context of the proposal, with particular reference to the proposal’s consistency and integration within Towards a Strategy for Botany Bay, the Metropolitan Strategy and the current investigation into the development of a Metropolitan Intermodal Freight Strategy and the achievement of modal split targets.
2. Environmental and amenity impacts: Pending information required to address a number of outstanding issues, particularly aviation and impacts on Penrhyn Estuary.
3. Justification of the proposal, with specific reference to conflicting information on the throughput capacity of the Port both in terms of its current “footprint” and proposed “footprint” and the consideration of alternative options.

Of the key issues which the Department identified in its primary submission, further information has become available on both the strategic context of the proposal and on the environmental and amenity issues. Sections 2.1 and 2.2 of this submission update the Department’s position in light of the additional information now available.

The justification of the proposal and conflicting information on throughput capacity is discussed in section 2.3 and section 3. The Department’s assessment continues to be based on a clear recognition of the need to meet the predicted growth in container trade in the coming decades (to approximately 3.2 million TEUs per annum by around 2025).

The Department considers that Port Botany’s capacity is unlikely to be agreed upon by all parties or conclusively determined as a result of further analysis. Capacity depends on a number of factors, including the willingness and timing of private sector investment, which are outside the control of the port authority and Government. The Department also notes that the various options for achieving the required capacity all have varying levels of impacts on the local, regional and also the statewide community, environment and infrastructure. It is in this context that the Department provides its further comment, for consideration by the Commission, on the justification of the proposal.

The following sections of this report present the Department’s updated position on the three key issues, to be considered in conjunction with the Department’s primary submission (dated October 2004).

2.1 Strategic Context

The Department recognises the long term strategic significance of Port Botany to the trade and wider economy of Sydney, New South Wales and the nation. The Port represents critical infrastructure essential to the growth and strengthening of Sydney as a global city. It is essential that Port Botany remain competitive and able to meet growing economic needs.

The Department accepts that there is justification for Port Botany to accommodate a throughput of 3.2 million TEUs per annum by 2025 and that not facilitating this container throughput will have ramifications for the competitiveness of the NSW economy. Facilitating container throughput would strengthen and maintain the strategic significance of Port Botany and is consistent with the NSW
Government Ports Growth Plan that promotes the next phase of container trade growth at Port Botany.

The Department also recognises that in the longer term (beyond 2025), growth of container movements through Port Botany beyond 3.2 million TEUs is likely to occur. The Department notes, however, that the environmental, amenity and broader infrastructure and strategic planning implications assessed in the current proposals relate to 3.2 million TEUs and as such any support for a higher throughput capacity must be based on further assessment.

In its primary submission and presentation to the Inquiry, the Department indicated that its support for any option for Port Botany’s expansion is subject to the achievement of its integration and consistency with key strategic initiatives in the metropolitan region. Given the proposal’s aim to achieve a 40 per cent rail mode share for freight, the Department particularly highlighted the importance of the Metropolitan Strategy and associated Metropolitan Intermodal Freight Strategy which, at the time of the primary session, were still being developed.

The primary elements of the Freight Strategy have now been released with the announcement, at the Sydney Futures Forum on 13 December 2004, of Stage One of a Port Freight Plan for Sydney. The announcement by the Minister for Infrastructure and Planning highlighted the Government’s commitment to a 40% rail mode share target for annual container movements to and from Port Botany by 2011 and contained initiatives to increase the rail mode share. Initiatives include:

- A freight infrastructure charge on containers coming in and out of Port Botany by road to encourage a shift to rail transport and to fund freight infrastructure;
- The establishment of a Freight Infrastructure Advisory Board to provide expert advice to the NSW Government on:
  - The design of an intermodal terminal network to improve freight distribution;
  - The infrastructure required to service the intermodal network; and
  - Potential changes to work practices such as ‘truck tracking’ to minimise queuing at the port gate; container in/container out to maximise the efficiency of truck haulage; and other strategies to minimise unnecessary movements of containers across the city.

The Port Freight Plan is the first step in developing a detailed plan for freight management in Sydney. It is consistent with, and needs to be seen in the context of, the NSW Ports Growth Plan. The Ports Growth Plan earmarks Port Botany as the New South Wales port that will handle the forecast container trade growth in coming decades. It is therefore essential that – irrespective of the Government’s decision on the expansion proposal – Port Botany and the associated rail and road infrastructure are able to sustain the expected container trade of approximately 3.2 million TEUs per annum by 2025.

The Ports Growth Plan sets the strategic framework for port-related infrastructure needs, thus giving the providers of port, rail and road infrastructure the necessary lead time to initiate long term development plans to accommodate the container growth. The Department considers that the Port Freight Plan – which aims for a 40 per cent rail mode share target through the development of strategically located intermodal freight terminals and other associated measures – is a critical component of the overall strategic requirements. The related issue of road infrastructure is addressed in this report (Appendix A) where contingency measures, should the 40% split not be achieved, are discussed. However, from a strategic perspective it is important to note that the traffic studies undertaken for the environmental impact statement were based on a zero increase in the rail mode share and that, given the initiatives outlined in the Port Freight Plan, this worst case outcome is unlikely.

The Government has established a clear framework for addressing the strategic implications of the anticipated growth in container trade in New South Wales in coming decades. The NSW Ports Growth Plan identifies Port Botany as the key port to absorb this growth. As indicated in the Metropolitan Strategy Discussion Paper, the Government recognises the continuing importance of the CBD to Airport Corridor which contains the State’s major economic drivers – Sydney CBD, the Airport and Port Botany. The role of the Corridor as the primary import and export centre for Sydney is set to continue, reinforced by the recent completion of major transport infrastructure projects such as the Airport Rail Link, M5 East extension and the Eastern Distributor. The proposed strategy for Botany Bay (Towards a Strategy for Botany Bay) will set out Government direction for key aspects of bay management, including conserving its natural, coastal and heritage significance, enhancing its liveability and sustainability while protecting its critical economic value.
Importantly, the recently announced Port Freight Plan highlights the Government’s commitment to ensuring the efficient distribution of container trade through the establishment of a network of intermodal terminals aimed at increasing the rail mode share of freight to 40 per cent by 2011. This plan will relieve pressure on the road network and provide for the more efficient movement of container freight within the metropolitan area and beyond, thereby alleviating the environmental and social impacts of the road mode share.

**Relationship of intermodal terminals to Port growth**

The Commission should note that the primary objective of developing an intermodal network is to facilitate an increase in the rail mode share of container freight movement such that the 40% rail target can be achieved. An increase in intermodal terminal capacity, in appropriate locations, will facilitate efficiencies in container movement by rail and make rail movements more attractive compared to road freight, thereby reducing the social and environmental costs. Intermodal terminals do not operate as storage areas for the port and are not substitutes for port capacity, instead they complement port capacity, as part of the downstream distribution system. Port capacity is a function of equipment, berth length, terminal slots and dwell time, dwell time being largely dictated by customs and quarantine processes that must be undertaken at the port.

**Strategic context: conclusion**

The Department considers the proposal to facilitate 3.2 TEUs per annum throughput at Port Botany via the proposed expansion is justified within a strategic context for three reasons:

- The proposal would ensure that Sydney meets the need to accommodate predicted growth in container trade and strengthen the role of Sydney as a global city; and
- The proposal is consistent with the objectives of the NSW Ports Growth Plan, *Towards a Strategy for Botany Bay*, current work being undertaken into the development of the Metropolitan Strategy and Stage 1 of the Port Freight Plan for Sydney.
- The Government has made public its strategic planning commitments to address the infrastructure and related implications of the forecast 3.2 million TEUs of container trade through Port Botany.

Any determination of the proposal by the Minister will be made in the context of available strategic planning information at that time.

### 2.2 Environmental and amenity impacts

In its primary submission, the Department indicated a number of key areas for which it required further information from the Applicant before finalising its assessment of the environmental and amenity impacts. The Department drew particular attention to the environmental impacts on Penrhyn Estuary and to the impact of the proposal on operational aviation issues associated with the port’s proximity to Sydney Airport. Other important issues consistently raised in submissions related to traffic and transport and to noise.

Details of the Department’s updated assessment of outstanding environmental and amenity issues are contained in Appendix A (Appendix B contains the most recent responses from the Applicant to issues raised by the Department in its primary submission.) A summary of the two key issues – Penrhyn Estuary and operational aviation issues – are provided here.

**Penrhyn Estuary**

The Department recommends a number of measures relating to the ongoing monitoring, management and maintenance of the proposed enhancement works. However, if the enhancement works are not successful, the Department supports the provision of contingency plans and of compensatory habitat. Included in Appendix A is a suggested process for the investigation by the Applicant, in consultation with key agencies, of alternative compensatory habitat.
Operational aviation issues
The Department understands that progress is being made to resolve the outstanding issues relating to aviation operations at Sydney Airport. A project plan is being developed by AirServices Australia “to determine the costs, issues and steps required to develop and deliver technologies that would provide reasonable confidence that the proposal would not impact on navigation and surveillance, within timeframes preferred by the Port.” However, due to the uncertainties which surround the certification process, the Department recommends that

- Prior to a determination by the Minister, there be a requirement for an in principle agreement between the parties that the aviation issues can be satisfactorily resolved; and
- If approved, construction may not commence until details regarding the steps and timeframe for resolution of aviation issues, including certification, be provided to the Minister.

Conclusion
The Department considers that, subsequent to the primary session of the COI, the Applicant has generally made acceptable responses to the additional information requests made by the Department in its primary submission dated October 2004. As a result the Department considers that the environmental and amenity impacts of the proposal could be managed with the adoption of appropriate mitigation and management measures. The Department has highlighted a number of recommended measures to address residual impacts in Section 3 of this report. These measures could be imposed by way of conditions of consent as applicable.

2.3 Justification of the proposal
In its primary submission, the Department acknowledged that:

- trends in Australian container growth require that there be a substantial increase in port throughput capacity in the short to medium term;
- failure to create this throughput capacity will have serious ramifications for the competitiveness of the NSW economy;
- the Applicant’s proposal is based on the premise that the existing port footprint cannot accommodate the predicted growth in container volume; and
- the environmental, social and economic impacts of the proposal are all predicted on this primary justification.

Submissions from industry and current port operators to the primary session did not dispute that there was a need to provide for an increase in throughput capacity at Port Botany. Some submissions, however, questioned the justification for that throughput to be accommodated by way of the option put forward by the Applicant (Option 1) and argued that the growth in container throughput could be accommodated within the existing port footprint or through more modest expansion options. These views were based on the premise that either all, or a large portion of, the estimated growth in container throughput to 3.2 million TEUs pa could be accommodated through upgrades to operating technology at the existing terminals. However, this would of course require investment from stevedores.

The Department highlighted this as a critical issue for resolution during the COI. A key concern for the Department is that if the proposed SPC expansion proceeds, but creates a significantly greater throughput capacity than the predicted 3.2 million TEUs pa, there would be implications for the provision of freight transport infrastructure in the Sydney Region, planning for which is based on 3.2 million.

Submissions to the Inquiry also raised implications for competition at the port, should a third terminal footprint not be developed.

The Department understands that attempts during the recess following the Primary session to resolve these differences and form a common opinion on the throughput capacity of the port have been generally unsuccessful. The Department has therefore undertaken a further evaluation of the issues raised in Primary submissions with regard to the project’s justification. Accordingly the Department provides further comment on the “do nothing” option and also examines the merits of consideration of one of the alternative options put forward in the Analysis of Potentially Feasible Options for expanding container terminal facilities at Port Botany (the multi-criteria analysis).
2.3.1 The “do nothing” option

A number of submissions to the primary session put forward the argument that the existing port footprint could accommodate the proposed annual throughput of 3.2 million TEUs without the need for expansion, through upgrades to operating technology. The Department’s primary submission (section 6) provided a discussion of the various capacity estimates put forward.

The Department is of the opinion that relying on the existing port footprint to accommodate the growth in container trade to 3.2 million TEUs per annum involves considerable risk to the competitiveness of the state and national economy, namely:

- the risk that future productivity improvements and/or technological changes do not occur, or are not put into place in time (given the potentially long lead times to implement them). Further, the implementation and development of such innovations and efficiencies would largely be beyond the government’s control and therefore there are no guarantees that such capacity will be created, or created within a timescale or manner that maximises the efficiency of the port in the context of the broader State economy;

- the risk that the Government objective of achieving a 40% rail mode share split could be compromised by moving the additional container throughput through the existing two rail sidings at the port. The proposed expansion would create a third 600m siding and provide greater flexibility in terms of moving freight by rail from the port; and

- the risk that actual container trade growth in coming decades outstrips forecasts of growth, in which case the ability of the port to service the trade would be severely hampered with a consequent negative impact on the state and national economy.

For the above reasons, the Department does not support the “do nothing” option as the risk to the state and national economy is considered too great. A “do nothing” option is not, in the Department’s view, in the public interest.

2.3.2 Alternative options

In May 2004, the Minister, revised the terms of reference to the COI to include an analysis of potentially feasible alternatives at Port Botany to the carrying out of the development. The Applicant prepared and submitted a supplementary report (Analysis of potentially feasible options) that included a multi-criteria analysis (MCA) of 11 alternative port layout options. The Department provided comments on the MCA as part of its primary submission.

Notwithstanding concerns raised in its primary submission about the methods and conclusions of the MCA, the Department considers that the Commission is required to evaluate the Applicant’s preferred option in the context of the alternatives presented. To assist in this process, the Department has reconsidered the alternative layout in the context of the issues raised on capacity and justification during the Primary Session. The Department considered the alternatives in the context of:

- whether the alternatives provide sufficient capacity for the assessed container throughput of 3.2 million TEUs at Port Botany;

- whether the alternatives reduce environmental impacts, or create more certainty with regard to environmental risks on the Botany Bay environment, in particular Penrhyn Estuary and its water quality and habitat;

- whether the alternatives retain flexibility in terms of rail access and siding provision to ensure that a 40% rail mode share could be achieved;

- whether the alternatives provide an outcome that would enable increased competition at the port in the future or maintain competition between current stevedoring operations should a third operator not be a viable proposition; and

- whether the alternatives would be compatible with or reduce conflict with Sydney Airport radar systems.

Based on the above, the Department recommends that the option referred to as Option 8 be adopted as the basis of the development footprint for the proposed Port Botany expansion (see Appendix D).
Both Options 1 and 8 contain a common footprint for four of the berths and significant common elements including access and rail infrastructure, albeit that minor modifications may be required in the design of such infrastructure. Option 8 also provides sufficient capacity to meet the forecast growth in container trade at Port Botany.

The key difference between the two options is the location of the fifth berth, with Option 1 locating it at the northern end of the proposed footprint (at the mouth of Penrhyn Estuary), while in Option 8 it is proposed as an eastern extension to Brotherson Dock South.

The advantages of option 8 over option 1 would appear to be:

- Option 8 reduces the quayline of the Option 1 expansion area which has the effect of widening the mouth of Penrhyn Estuary by 70 metres. This would potentially improve tidal exchange between the Estuary and Botany Bay. This may reduce some of the uncertainty associated with the success of the proposed estuary enhancement program;
- Option 8 would retain the third rail siding and the flexibility it offers in terms of movement of containers by rail and the ability to meet the Government’s 40% rail mode share commitment;
- Option 8 still provides the opportunity for the entry of a third operator. However, it also provides for parity between the existing stevedores (4 berths each) and thus both maintains the present competitive environment of the port while at the same time not precluding future competition; and
- Option 8 would also have the advantage of ensuring that two of the additional berths are located adjacent to the existing stevedore operations, thus increasing the likelihood of the additional berth space being developed sooner rather than later, as may not be the case if the new berth space was dependent on a third terminal operator.

Section 3.1 of this report outlines the Department’s recommendation for a staged consent framework to ensure a full environmental impact assessment of that part of Option 8 (Brotherson Dock South) not already assessed in the proposal before the Inquiry.

3 PROPOSED CONSENT FRAMEWORK AND RECOMMENDED MEASURES

3.1 Staged Development

The Department recommends that a staged consent framework be adopted that would provide for conditional approval for the common elements of Options 1 and 8 (Stage 1) and defer determination of the fifth berth (Stage 2) pending a full environmental impact assessment of the berth located at the north eastern end of Brotherson Dock South. Such an assessment could be done by way of an amendment to the DA to stage the DA and incorporate the Brotherson Dock berth area into Stage 2. The amended Stage 2 of the DA would be required to be notified and publicly exhibited in accordance with the EP&A Regulation 2000.

The proposed consent framework would enable the Minister to determine those aspects of the proposal (Stage 1) that, in the Department’s opinion, are justified on both environmental and strategic grounds and could be managed with the adoption of appropriate management and mitigation measures. The framework also enables the Minister to approve Stage 1 while allowing a full assessment and public consultation process for the Brotherson Dock berth as a second stage and enable the Minister to consider this stage on its environmental amenity impacts.

There may also be the scope to defer commencement of Stage 1 (if approved) until a determination is made on Stage 2 such that the interrelationship between these two stages can be considered.

3.2 Capacity Limits

The development application for the port expansion and supporting environmental impact statement is predicated on a container throughput at the port of 3.2 million TEUs pa from Port Botany as expanded. Given the predicted environmental impacts from the proposal stem from this throughput, any increase in container throughput over and above 3.2 million TEUs pa must therefore be the subject of a further environmental impact assessment, in particular to ensure that such throughput can be accommodated on the surrounding road and rail networks, and beyond.
It should be noted that the 3.2 million TEU capacity relates to the total port operations and therefore incorporates the existing throughput at the current stevedoring operations as well as any increase in that throughput between now and when the expansion area is developed as a terminal.

Given this proposal is for the development of a land envelope for a port terminal, and that the terminal infrastructure itself would require a development consent in the future, it would be more appropriate to enforce a limit at that time to reflect contemporary throughput capacity and ensure the 3.2 million TEU limit is maintained.

Notwithstanding, this position should be clearly articulated as a note to any consent (if granted) such that this matter would be considered in the assessment of future terminal infrastructure.

3.3 Scope of Recommended Measures to Address Residual Impacts

Should the proposal be approved, measures to address residual environmental and safety impacts, and the general approach applied to the drafting of conditions of consent for State significant developments, can be outlined as follows:

- **mitigation requirements** – additional measures, whether physical or procedural, that may need to be applied to the proposed development to address residual environmental impacts. Equally, mitigation measures committed to by the Applicant may be restated in any development consent for clarity, or to highlight specific mitigation measures that are of fundamental importance to the environmental and safety performance of the proposed development. Conditions of consent usually specify a desired outcome with the responsibility for application of appropriate measures to achieve the specified outcome resting with the Applicant.

- **monitoring requirements** – periodic or continuous monitoring may be required to ensure that mitigation measures are functioning as expected, or to confirm the environmental and safety performance of the development. While guidelines exist to define the general requirements for monitoring (for example, the EPA has specific guidance documents for air quality monitoring), the approach to monitoring is usually the responsibility of the Applicant, with relevant guidance documents, and any development consent, specifying the desired monitoring outcomes.

- **management requirements** – environmental management and safety management plans to ensure adequate measures are to be implemented by the Applicant to comply with the conditions of consent, and to minimise any residual environmental impacts.

- **reporting and auditing requirements** – reporting and auditing is usually required to provide an information and feed-back mechanism for regulators to ensure that the conditions of consent, and other approvals such as an Environment Protection Licence from the EPA, are being complied with. Reporting also provides the community with an opportunity to be informed through the open and transparent provision of monitoring and reporting data.

- **administrative requirements** – administrative requirements generally relate to legal or procedural matters that are included in a development consent as required by the provisions of the Act, or to clarify the scope of the development consent or how it is to operate/ be applied.

3.4 Key Recommended Measures to Address Residual Impacts

To ensure the potential environmental impacts from the proposed development are minimised as much as is reasonably feasible, the Department has identified key issues where detailed recommended measures would be required and could be imposed by the Minister to mitigate, monitor and manage these impacts. If required, the Department can provide full details of these measures to the Commission subsequent to the reply session. This process would ensure that any relevant information presented at the reply session can be incorporated if considered appropriate by the Department.

The Department considers it important to highlight those matters that it considers of key importance to the proposed development, and those issues that should form an important component of any approval for the proposal, if granted by the Minister. These key issues are:

**Traffic, transportation and infrastructure** – The Department considers that recommended measures would need to be developed to ensure that the impact of the proposed expansion on local and regional traffic and transportation is mitigated. These need to be viewed in the context of the Government’s aim to increase the rail mode share to 40 per cent by 2011. Recommended measures would include the requirement for detailed construction and operation management plans to be
prepared in consultation with relevant councils and agencies, the establishment of monitoring programs for key intersections, and a range of other mechanisms.

**Noise impacts** – To ensure that the proposed construction and operational stages of the proposed expansion do not generate an unacceptable noise effect, both stages should be subject to stringent noise limits, monitoring, mitigation and management requirements. These stringent conditions would relate to construction, operation, traffic noise management and rail noise management.

**Penrhyn Estuary** – To facilitate the success of the proposed enhancement works of Penrhyn Estuary, the Department considers that prior to the commencement of such works a detailed Penrhyn Estuary Habitat Enhancement Plan would need to be prepared in agreement with DEC, Department of Primary Industries (DPI), DIPNR and Botany Council. The plan would outline as a minimum success criteria for the enhancement works, detailed design, proposed works methodology, and ongoing monitoring, management and maintenance programs to be undertaken by the Applicant.

In addition the plan would also be required to include details of a contingency plan and triggers (similar to those identified in section 7.0 of the Doug Watkins (Wetlands International – Oceania), December 2004, *Review of the Potential Impacts of the Proposed Port Botany Expansion on Shorebirds*) that would activate the need for a Green Offset.

**Operational aviation issues** – The Department recommends that a project plan is required to be developed to determine the costs, issues and steps required to develop and deliver technologies that would provide reasonable confidence that the proposal would not impact on navigation and surveillance. Such a plan should include details of the process for, timing of, and likelihood of certification. However, due to the uncertainties which surround the certification process, the Department recommends that:

- Prior to a determination by the Minister, there be a requirement for an in principle agreement between the parties that the aviation issues can be satisfactorily resolved; and
- If approved, construction may not commence until details regarding the steps and timeframe for resolution of aviation issues, including certification, be provided to the Minister.

**Summary of other matters** – In addition to the key issues discussed above the Department would also develop a suite of appropriate recommended measures to ensure adequate management of potential impacts of the proposal associated with the issues identified in Appendix A of this submission.

**Community consultation, information and involvement** – The Department recommends that any approval would require ongoing and formalised community consultation processes including transparent and accountable mechanisms for complaints and dispute resolution.

The Department will prepare a set of draft, without-prejudice recommended measures that the Commission may wish to consider if it determines that the balance of the above issues falls in favour of the proposed development. These recommended measures should not be interpreted to mean that the Department has resolved to support or oppose the proposal at this time, or that the measures pre-empt the Commission’s consideration of the proposal.

## 4 CONCLUDING COMMENTS

As identified by the Department at the primary session of the Commission of Inquiry, assessment of the proposed development is dominated by three key – and interrelated – issues:

- Strategic planning
- Environmental and amenity impacts
- Justification of the proposal, with particular regard to port capacity and alternative layouts.

The Department accepts that there is a clear justification for Port Botany to accommodate a throughput of 3.2 million TEUs pa by 2025 and the implications of not facilitating this container throughput will have ramifications for the competitiveness of the NSW economy. The Department’s
view is that a “do nothing” option poses a high risk to the state and national economy and is therefore not in the public interest.

The Department is satisfied that the proposed expansion of Port Botany to accommodate this throughput is consistent with the objectives of the NSW Ports Growth Plan, *Towards a Strategy for Botany Bay* and current work being undertaken into the development of the Metropolitan Strategy and the Port Freight Plan for Sydney.

With respect to environmental and amenity impacts, following the submission of additional information and clarification during the course of the Inquiry, the Department is now satisfied that the residual impacts of the SPC proposal could be managed with the adoption of appropriate mitigation and management measures.

The Department has given further consideration to the alternative layout proposals for the proposed expansion at Port Botany. It recommends that Option 8, as indicated in Appendix D, be recommended as the footprint for port development on a staged development basis.

The Department considers that the Commission has adequate and appropriate information to conclude its advice to the Minister.
Appendix A

DETAILS OF THE DEPARTMENT'S ASSESSMENT OF ENVIRONMENTAL AND AMENITY IMPACTS

Details are provided below of the current status of the assessment of those environmental and amenity impacts which, in its primary submission, the Department considered required additional information from the Applicant. The Commission should note that the majority of issues relate to the environmental impacts on Penrhyn Estuary and the proposed enhancement works for the Estuary. In the Department's primary submission these were dealt with in a number of separate chapters but in this report have been consolidated.

1. Traffic, transport and infrastructure
The Department’s revised primary submission to the COI highlighted a number of concerns:
- local and regional traffic impacts; and
- rail mode share.

Local and regional traffic impacts
In its primary submission the Department considered that the impacts could, in general, be adequately addressed through mitigation and management measures. However, the Department identified a number of intersections which would require further detailed design and investigation to determine whether they would be operating at optimum level of service. These intersections include:
- Foreshore Road/Botany Road;
- Foreshore Road/General Holmes Drive;
- General Holmes Drive/Botany Road;
- Botany Road/Container Road Access;
- Botany Road/Bumborah Point Road; and
- Botany Road/Beauchamp Road.

The Applicant has provided the response that in its view only three intersections warrant detailed design. These intersections are:
- the new boat ramp access from Foreshore Road **(to be constructed as part of the proposal)**;
- the new terminal access from Foreshore Road **(to be constructed as part of the proposal)**; and
- Botany Road/Foreshore Rd/Penrhyn Road intersection.

The Applicant proposes to undertake detailed analysis of these three intersections only if the need should arise in the future. The analysis would be done in accordance with RTA requirements and approved by the RTA. The only intersection identified for possible upgrade, if required, is Botany Rd/Foreshore Rd/Penrhyn Road which the Applicant notes mainly services the operations of the current Port.

The Applicant’s assessment of local and regional traffic impacts was based on the worst case scenario of a zero increase in the current rail mode share split. The Department acknowledges that this is a conservative approach, and that measures arising out of the recently announced Port Freight Plan should deliver an increase in use of rail. However, given the potential road traffic impact on the local community, the Department recommends that the Applicant determine, in consultation with Botany Council and RTA, and agreed to by the RTA, those intersections which require monitoring and, potentially, detailed analysis. The Department further recommends, by way of conditions of consent (should the Minister approve the proposal), that the Applicant be required to monitor the level of service in those intersections. The monitoring program would need to be conducted in consultation with the RTA and Botany Council. If the monitoring identifies that upgrades are necessary as a result of port traffic growth, a proportional contribution to the upgrades would be required.

Sydney Ports agrees with the Department’s recommendation that Construction and Operations Traffic Management Plan should be prepared by the Applicant in consultation with the RTA, DIPNR, Botany and Randwick councils and SSROC. This requirement would be included as a condition of consent should the Minister approve the proposal.
The Applicant agrees to the need for the provision of a safety audit for any road works, traffic management facilities, provisions for pedestrian and cyclists in accordance with RTA guidelines. Sydney Ports also agrees to the drafting of a comprehensive handbook to guide drivers to accepted routes and preferred hours of use to be completed prior to the start of construction. Both of these requirements can be dealt through conditions of consent.

The Department’s initial submission indicated the need for Sydney Ports to establish a formal mechanism for continued liaison with the RTA and Botany and Randwick Councils on matters relating to the traffic control on heavy vehicle routes to ensure adequate enforcement of traffic management measures and optimum road operating conditions in the vicinity of the Port area. The establishment of such formal mechanism can be dealt with through conditions of consent should the proposed development be approved.

Rail mode share
A key concern (RailCorp, RTA and Councils) in submissions received during the exhibition periods of the EIS and supplementary information was the need for intermodal terminals. Under the first stage of the Ports Freight Plan, a Freight Infrastructure Advisory Board chaired by the Hon. Laurie Brereton will be convened to investigate improving Sydney’s freight management system. As indicated in section 2.2, details of the Board’s terms of reference will be submitted to the Commission as soon as they are available.

In terms of the rail mode share, as discussed in the Strategic Planning Framework section (section 2.2), the Government’s Ports Freight Plan’s key objective is to look at ways in which more freight is moved by rail. The Government has nominated a benchmark of 40 per cent of containers be moved by rail by 2011. To achieve this rail/road split, the Applicant indicates a number of initiatives, including:

- Completion (by Railcorp) of full duplication of the dedicated freight rail line between Port Botany and the Enfield Marshalling Yards;
- Construction of three additional rail sidings;
- Provision of a 600m passing loop;
- undertaking of intersection works (Foreshore Road/General Holmes Drive) if 40% rail mode share is not achieved.

As indicated above, additional intersection works may also be required, as determined by the RTA.

Conclusion
The Department is of the opinion that the traffic impacts on the local and regional networks may still require further investigations if it is warranted in the future, particularly in relation to the six intersections highlighted by the Department. Should the Minister decide to approve the proposed development, the Department recommends that the Applicant monitors these six intersections in consultation with Botany Council and the RTA. The Department also recommends that, through conditions of consent, the Applicant be requested to prepare construction and operations Traffic Management Plans in consultation with RTA, DIPNR, Councils and SSROC.

As discussed above, various government and community groups have expressed concern that the 40 per cent rail mode share nominated in the EIS would not be achieved but the recently announced Port Freight Plan and the Freight Infrastructure Advisory Board, would investigate initiatives to achieve this benchmark.

2. Noise
The Department’s primary submission to the COI identified a number of noise issues which required further additional information and/or resolution.

Construction hours
One of the main issues which requires resolution is the Applicant’s proposed hours of construction. The Applicant proposes to carry out construction activities 6 days per week (Monday to Saturday) from 7am to 6pm with dredging being conducted 24 hours per day, 7 days per week. Neither DEC nor DIPNR have concerns regarding the 24 hours dredging operations since the predicted noise levels would not result in exceedances of the specified noise criterion. In their respective primary submissions to the COI, DIPNR and DEC, agreed that the construction hours should follow the hours...
as recommended in DEC’s Environmental Noise Control Manual (ENCM). The standard construction hours are 7am to 6pm Monday to Friday and 8am to 1pm on Saturdays.

The Applicant has advised that the construction timeframe would have to be extended if the construction hours were restricted. The Applicant has also indicated that the construction noise levels are likely to be less than those predicted in the EIS. The Applicant has suggested a number of initiatives to ameliorate noise impacts on nearby residences including a noise management plan which would, for example, recommend that only construction works which are not audible on the affected residences be carried out outside normal construction hours.

The Department recommends that the construction hours should be as those suggested in the Environmental Noise Control Manual but that these hours may be increased to those requested by Sydney Ports if the Applicant can demonstrate—through the provision of details of proposed construction activities to DEC—that such activities will have no audible impact on affected noise receivers. The consultation process would require for Sydney Ports to reach an agreement with DEC on the type of non-audible construction activities which could be carried out outside the standard construction hours.

In addition, the Applicant would be required to monitor noise levels and set up a complaints telephone line which would provide number and nature of complaints received. The information obtained would be referred to DIPNR and DEC on a quarterly basis. If the number or nature of complaints so warrants, then the issue of construction hours would need to be revisited in consultation with DEC and DIPNR.

**Noise Modelling**

The Applicant has also agreed to a recommendation from DEC requiring ongoing operational analysis to determine the adequacy of a 90 per cent operational capacity used in noise modelling to represent the ‘typical worst case scenario.’ This requirement could be dealt with through conditions of consent.

The Department’s submission also requested that Sydney Ports investigate the modelling of a combination of noise Barrier option 3 with the recommended Barrier option 1 to determine whether a combination of these two barriers would reduce noise impacts along the northern side of Foreshore Road. SPC is currently conducting the requested modelling and the results are expected to be presented in the Applicant’s reply submission.

**Port Traffic Management Plan**

The Applicant has committed to the preparation of a Port Traffic Management Plan in conjunction with operators which would implement traffic management measures to minimise noise impacts on sensitive receivers by adopting measures such as traffic re-routing, traffic clustering, traffic re-scheduling and driver awareness programs.

Should the Minister determine to approve the proposal, the Department would recommend that the Applicant be required to draft Noise Management Plans, in consultation with and agreed to by DIPNR, DEC and Randwick and Botany councils, covering both construction and operational noise.

**Rail Noise**

In its primary submission, the Department questioned the rail noise assessment presented in the EIS and conducted by RailCorp for the duplication of the freight rail line. The noise assessment does not assess the impacts of rail noise and does not identify appropriate mitigation measures to the satisfaction of the DEC. Sydney Ports has responded that RailCorp is the body responsible for the management and operation of the freight rail line and that this is outside the scope of the EIS. The duplication of the freight line between the Botany Yard and Cooks River would be the subject of a separate planning assessment process. This duplication is proposed irrespective of the proposed Port expansion. In addition, the operation of the freight line would require an Environment Protection Licence from DEC.

The Department considers that the proposal would significantly add to the volumes of trains on the freight line and that a noise assessment should be conducted in conjunction with RailCorp and the Australian Rail Track Corporation (ARTC) to identify the impact on residents and to recommend mitigation measures prior to construction if the proposal was approved.

Sydney Ports has also advised that a working group will be established to address the rail noise issues generated by the proposed expansion. The Department would expect that the working group
would be composed of representatives from DEC, DIPNR, RailCorp, ARTC and Botany Council. The Department supports this initiative.

**Conclusion**

The Department is satisfied that through further consultation, monitoring and the preparation of construction, operation and traffic noise management plans, noise impacts on nearby residences can be mitigated. The Department recommends that further consultation should take place between DIPNR, DEC and the Applicant so that an agreement can be reached regarding construction hours. Should the Minister approve the proposal, the Department recommends a number of conditions of consent be imposed to manage noise impacts. These conditions of consent range from the preparation of noise management plans to monitoring.

**3. Penrhyn Estuary water quality and ecology**

The Department reported at the primary session that a number of issues regarding impacts of the proposal on Penrhyn Estuary required further clarification from the Applicant.

The Department emphasises that the majority of the issues raised by both DIPNR and DEC during the primary session related to the Applicant’s proposed enhancement of Penrhyn Estuary, and to concerns over the likely success of those enhancement works. Subsequent to the primary session the Applicant has committed to an evaluation of Stage 1 of the habitat enhancement works. If the evaluation determines that the works have not been successful, or that further works are likely to be unsuccessful, the Applicant will provide funding for compensatory conservation outcomes, consistent with the Green Offsets draft concept paper prepared by DEC (EPA 2002). The Applicant would then consult with DEC to identify appropriate projects and to agree on suitable equivalent funding arrangements. Subject to details to be developed between the relevant agencies, the Department considers this to be an acceptable approach.

A summary of the specific issues raised by the Department in its primary submission is provided below. Where additional information has been provided by the Applicant subsequent to the primary session of the COI it is highlighted, including a response from the Department, in *italics*. At the primary session of the COI, the Department reported in its preliminary assessment on the impacts of the proposal on Penrhyn Estuary from both an ecology and water quality perspective. This reporting was undertaken separately in sections 7.3 and 7.13 of the Department’s Primary Submission dated October 2004. However, as the major issues raised in both sections centred on Penrhyn Estuary, they have been combined into one section for the purposes of this document.

Further details of the Applicant’s response are provided in Appendix B.

**Saltmarsh and seagrass**

- Impact of enhancement works on saltmarsh

  *In information provided subsequent to the primary session of the COI the Applicant has committed to developing success criteria for the habitat enhancement works in agreement with relevant government agencies as part of the detailed design of the works and in preparing a monitoring and management plan for the area. The Department considers this approach to be acceptable. In addition, the Applicant has also brought to the Department’s attention more recent literature references that have been used to inform saltmarsh and mangrove cover conclusions. The Department accepts that the additional literature references support conclusions made in the EIS.*

- Erosion of sand/mud flat levels

  The Department requested a contingency plan in the event that sand/mud flat is eroded to a level which reduces its ecological value or role in the habitat enhancement works.

  *Subsequent to the primary session the Applicant has committed to develop a contingency plan as part of the management and monitoring associated with the proposed habitat enhancement work. The Department considers this approach to be acceptable. Details of the plan would be required to be developed and agreed between relevant agencies when formulating the success criteria, prior to construction.*

- Consequences of increased turbidity on the light climate in existing and proposed seagrass areas
While the Department accepts that the turbidity would be unlikely to affect the proposed transplanted colonised area of seagrass, a monitoring program would need to be agreed between relevant agencies to ensure an ongoing review of turbidity impacts.

Sandy subtidal habitats
- Consequences of 2.4% loss of Bay wide shallow sandy habitat

The Applicant has provided additional clarification of the consequence of the 2.4% loss. Included in this response is a comment that the majority of the area to be reclaimed and dredged is not shallow habitat (being deeper than -3.5 LAT). 27ha to be removed due to reclamation is reported to represent a partial loss of aquatic productivity within the Bay. The Applicant states this will partially be compensated for by colonization of hard surfaces associated with the terminal, which extend throughout the water column and are well known to become readily colonized by algae and invertebrates. The Applicant also reports that, cumulatively, while there would be a reduction of the shallow habitat, there will remain a very large area of shallow habitat distributed over much of Botany Bay. The Department considers this an acceptable response. However, measures to encourage colonization of hard surfaces would need to be investigated, included in the detailed design stage and their success reported to the relevant agencies including DIPNR and the Department of Primary Industries.

Species Impact Statement Peer Review
- Measurement of impact of enhancement works on bird numbers

Subsequent to the primary session, the Applicant has provided additional information referring to the Review of the Potential Impacts of the Proposed Port Botany Expansion on Shorebirds, Final Draft, October 2004 by Doug Watkins. Section 5.3 of this report proposes benchmark values for the abundance and occurrence of key shorebird species at Penrhyn Estuary. These values are put forward as indicators of “no negative impact” on shorebirds at Penrhyn Estuary. The Department considers these values will need to be agreed between SPC, DEC and the Department as part of the development of detailed management and monitoring plans and agreed success criteria for the proposed enhancement works.

- Timeframe within which the wetland enhancement should be completed

The Applicant has confirmed that the staging proposed to be undertaken for the habitat enhancement works has been proposed to minimise disruption to the birds. The Applicant proposes that timing of the construction works and staging will be dealt with as part of the detailed design of the works which would be agreed with relevant government agencies prior to construction. The Department considers this is an acceptable approach.

- Levels/concentrations of food organisms required for birds

The Applicant has proposed that this be dealt with as part of the detailed design and development of success criteria for the habitat enhancement works. These criteria would be agreed between relevant government agencies prior to construction. The Department considers this to be an acceptable approach.

Penrhyn Estuary Risk Assessment
In its primary submission, following its preliminary consideration of the Penrhyn Estuary Risk Assessment (September 2004), the Department raised a number of issues requiring clarification. These related to

- Definitions of risk levels and likelihood descriptors

While the Department is satisfied that these have been provided in the Risk Assessment, it considers the descriptors would require more discussion between relevant agencies during the detailed design phase of the proposed enhancement works.

- Bibliographic references

The Applicant has subsequently made reference to the primary documentation location in the supplementary submission to the EIS in which references are described in detail. The Department considers this referencing to be adequate.

- Long term maintenance of Penrhyn Estuary
The Applicant has indicated that the long term maintenance will be the responsibility of Sydney Ports Corporation. Maintenance requirements will be agreed between relevant agencies and included in the detailed management plan for the enhancement works.

- The likelihood of microalgae being brought into the area by ballast water transfer

  The Applicant has referred to the Risk Assessment, Risk Issue – Introduced species for the Assessment Endpoint – maintenance of Penrhyn Estuary Estuarine Ecosystem in the table in Appendix B. The Department considers this to be an acceptable response.

Shorebird habitat

- Timeframes for mangrove colonization

  The Applicant has reported that the likely timeframes are 5 to 10 years. The proposed habitat enhancement in the EIS provides a structural basis for responding to these time frames. The Department considers this is an acceptable response and would need to be incorporated into the detailed design phase for the proposed enhancement works.

- Risk register and success criteria for enhancement works

  The Applicant considers that the entire habitat enhancement plan is required to be implemented in order to ensure success of the estuary to achieve the stated ecological objectives. The Department considers this position needs to be put forward when the agreed level of success is being reached with the relevant agencies, Department of Environment and Conservation (DEC) and Department of Primary Industry (DPI), prior to the commencement of any proposed works.

  The Applicant proposes to provide detailed methodology and frequency of mangrove removal in the development of a Vegetation Management Plan. The Department considers this response is acceptable.

Failure of Seagrass

- Ecological value of existing seagrass

  The Department requested clarification of the statement in the Risk Assessment that the existing seagrass was of limited ecological value. The Applicant has indicated the statement is based on ongoing erosion at the southern end of Foreshore Beach and that the morphological characteristics of the seagrass provides less value to fish and invertebrates. The Department considers this response to be acceptable.

- Impact of transplanted seagrass on ecological value

  The Applicant has provided additional information, suggesting the preparation of the habitat would have a suitable substratum and be at a suitable depth for growth; the area set aside for seagrasses would be sheltered by the new terminal, and hence not subject to turbulence or erosion, and seagrasses establish naturally in many areas created by human activity, most notably in canals where the substratum consists of soft sediment at an appropriate depth. It indicates that these areas can be highly productive (see Lincoln Smith et al., Marine and Freshwater Research, 46: 715-721, 1995). The Department considers this additional information to be acceptable.

- Success criteria for seagrass establishment, including abundance and composition of fish using the site as a nursery ground

  The Applicant proposes that success criteria for the habitat enhancement works would be agreed with relevant government agencies as part of the detailed design of the works and in preparing a monitoring and management plan for the area. The Department considers this process can form a recommended measure to address residual impacts.

- Justification for confidence in success of seagrass transplanting

  The Applicant had stated that there is confidence that the seagrass compensatory habitat, rather than simply the transplanting alone, would have a high chance of success. It states that “should the transplanting not be successful, seagrass would establish naturally where the environment is suitable for growth. Seagrasses establish naturally in many areas created by human activity, most notably in canals where the substratum consists of soft sediment at an appropriate depth. These areas can be highly productive (see Lincoln Smith et al., Marine and Freshwater Research, 46: 715-721, 1995). The key to successful creation of compensatory
habitat for the proposed Port Botany expansion will be facilitating growth by a combination of natural colonization and transplanting.” The Department considers this is an acceptable response. However, the Department also considered that a recommended measure to address residual impacts will need to ensure contingency enhancement measures are developed as part of the detailed design phase.

**Introduced species**
- Monitoring and management measures for introduced species

The Applicant has now clarified that introduced species associated with commercial shipping are primarily associated with ballast water and hull fouling. It indicates that “At Port Botany, ships are not allowed to clean their hulls and therefore there is a limited chance that fouling organisms are transferred to Botany Bay while vessels are in port.

“With respect to ballast water discharge, container vessels in Port Botany typically do not discharge ballast water. However, any discharge of ballast water is required to be approved by the Australian Quarantine Inspection Service (AQIS) which looks at the risks associated with such discharge. This issue is therefore most appropriately managed on a national basis by AQIS than individually by SPC.”

The Department considers that the process administered by AQIS is an acceptable established national process to manage introduced species.

**New intertidal flats unable to support migratory birds**
- Definition of levels of acceptable erosion (ie what is normal estuary erosion and deposition) and point at which management intervention is required
- Risk, impact and management of subsidence of constructed banks and beds

Subsequent to the primary session the Applicant has committed to addressing the above detailed requirements as part of the detailed management and monitoring plan for the habitat enhancement works which would be agreed with relevant agencies. The Department considers this to be an acceptable approach.

**Water Quality**
- Dissolved oxygen modelling

Subsequent to the primary session the Applicant has provided the Department with a detailed response regarding clarification and basis from the methods and literature values underpinning the conclusions. In addition the Applicant has restated commitment to providing the proposed eight hectares of seagrass. The Department considers this to be an acceptable response.

- Suspended sediment and the maintenance of SQIDS

The Applicant has committed to being the responsible body for cleaning and maintenance.

- Possible contradictions between conclusions regarding the flushing times and outcomes of investigations into the diurnal oxygen variation in Penrhyn Estuary

The Applicant has clarified that the conclusion that the risk of phytoplankton blooms is minimal is not based on the seagrass DO modelling but rather is due to the flushing time of Penrhyn Estuary being significantly lower than the effective doubling rate of algal species as reported by Rissik et al (2003). The Department considers this to be an acceptable response.

- Estimates of the likely reduction in nutrient load as a result of the use of SQIDS

The Applicant has stated that the effectiveness of the SQIDS in reducing nutrient loads and suspended solids loads is between 20-60%. This range was based on literature and manufacturer’s advice. The Department considers performance monitoring and ongoing maintenance to achieve the higher level of reduction would be required as a minimum.

- Applicability of ANZECC standards to the proposed development area regarding risk of algal blooms

Following DIPNR’s concerns regarding the applicability of ANZECC standards to the proposal, the Applicant undertook an additional assessment of water quality considering nutrient loads and flushing times. This assessment concluded that, consistent with the application of ANZECC standards, there was little increase in the risk of algal blooms in the estuary as a result of the proposal. The Department considers this is an acceptable response.
Hydrology and Flooding

- Potential need for sensitivity testing to be carried out using different Manning’s ‘n’ values

  The Applicant has subsequently responded claiming sensitivity testing of Mannings ‘n’ is not considered necessary as the Manning’s value selected (0.03) is considered to be reasonable for the modelling. This number has been supported in the peer review of the hydrology and hydraulics work undertaken by Professor Ron Cox of the University of NSW Water Research Laboratory. The Department considers the need for sensitivity testing may still need to be explored prior to construction.

Alternative Compensatory Habitat Options

- The Department required as a minimum the Applicant to provide details of alternate compensatory habitat options.

  Subsequent to the primary session the Applicant has committed to evaluation of the Stage 1 habitat enhancement works, and if it is determined that the works have not been successful and that further works would also be unlikely to be successful, provide funding for compensatory conservation outcomes that are consistent with the Green Off-sets draft concept paper prepared by the EPA (2002). The Applicant would work together with DEC to identify appropriate projects for funding and agree suitable equivalent funding arrangements, prior to construction works commencing. Subject to DEC support, the Department considers this to be an acceptable approach.

Environmental Mitigation, Management and Monitoring

- The Department provided a list of additional information requests in the primary submission regarding ecology and water quality that would be required regarding the development of management and monitoring plans and programs proposed by the applicant generally and specifically related to aquatic and terrestrial ecology. These additional information requests form part of the Department’s recommended measures to address residual impacts discussed in section 4 of this document.

Penrhyn Estuary: Conclusion

In regard to Penrhyn Estuary, the Department supports the objective of providing compensatory habitat through the construction of the proposed enhancement area. The Department considers that, subsequent to the primary session of the COI, the Applicant has generally made acceptable responses to the additional information requests made in the DIPNR primary submission dated October 2004. Notwithstanding, the Department has highlighted a number of recommended measures to address residual impacts in Section 4 of this report. These relate to the ongoing monitoring, management and maintenance of the proposed enhancement works. Included in these recommended measures for the Commission’s consideration is a suggested process for the investigation of alternative compensatory habitat by the Applicant, if determined to be required.

4. Operational aviation issues

In its primary submission, the Department raised concerns over uncertainty surrounding the development and certification of navigation and surveillance technology which Airservices indicated is required as a result of the proposed port expansion. Both the Department and the Commissioner requested that the Applicant liaise further with Airservices Australia on this issue. It is understood that since the Commission’s primary session, productive discussions have been held between the Applicant and Airservices Australia.

The Department refers to a letter provided by the Applicant from Airservices Australia, addressed to Mr Colin Rudd of Sydney Ports Corporation, dated 3 December 2004. This letter indicates that a project plan to determine the costs, issues and steps required to develop and deliver technologies that would provide reasonable confidence that the proposal would not impact on navigation and surveillance, within timeframes preferred by the Port.

While the Department welcomes the establishment of a process to address unresolved issues, there appears to remain some uncertainty regarding certification of the proposed technology by the Civil Aviation Safety Authority (CASA). The Department therefore suggests that the project plan should
include details of the process for, timing of, and likelihood of certification, and that the Department be provided with these details. The Department recommends that:

- Prior to a determination by the Minister, there be a requirement for an in principle agreement between the parties that the aviation issues can be satisfactorily resolved; and
- if approved, construction may not commence until details regarding the steps and timeframe for resolution of aviation issues, including certification, be provided to the Minister.

**Conclusion**

Due to the uncertainties which surround the certification process, the Department recommends that further information is required from the Applicant in terms of a project plan which would be need to be provided to both the Commission and the Department. In addition, should development consent be granted, the Department recommends that approval be conditioned to ensure that operational aviation issues, including certification, are resolved prior to operation of the development.

**5. Summary of other matters**

In its primary submission, the Department indicated that a number of impacts associated with the proposal could be managed through the implementation of appropriate mitigation measures during construction and operation, without a need for further assessment or provision of information from the Applicant. These impacts related to:

- Geology, soils and geotechnical issues
- Coastal processes
- Emergency incident management
- Waste management
- Visual amenity

Recommended mitigation measures which have been identified for all issues relating to the environmental impact of the proposed development will be provided to the Commissioner subsequent to the Reply Session. An update is provided below on those issues for which, at the time of preparation of the primary submission, the Department requested additional information from the Applicant in order to finalise its assessment.

**Groundwater**

The Department indicated in its primary submission that monitoring of groundwater levels should be continued for a minimum of five years beyond the construction phase, with a data review on completion of construction and at the end of the five year period. In response, the Applicant has advised that “the EIS identifies negligible changes in groundwater levels as a result of the proposed expansion. However, since lodging the EIS, an EIS has been released by Orica associated with pumping and treating of contaminated groundwater. The Orica EIS identifies reductions in groundwater levels in the residential areas immediately upstream of Foreshore Beach of between 0.2m–0.4m associated with the remediation works. This is in comparison with a predicted 0.01–0.04m rise in groundwater levels associated with the proposed port expansion for the same area. The Orica EIS confirms that the changes associated with the port expansion will be insignificant in comparison to the changes associated with their works.”

The Department concurs with Sydney Ports Corporation’s view that, under these circumstances, it is not the most appropriate body to undertake monitoring. The Department supports monitoring being conducted by Orica. However, the Department also considers the Applicant would, if the proposal were approved, be required to liaise with Orica and DEC prior to commencement of any relevant works in order to ensure that the expansion does not impact on the groundwater remediation process. It is noted that the consent authority for the proposed Orica remediation works is the Minister for the Environment.

**Hydrodynamics**

Having reviewed the Peer Review (by UNSW Water Research Laboratory May 2004) of the Applicant’s hydrodynamic modelling work, in conjunction with additional information on hydrodynamics provided by the Applicant throughout the assessment process (included in appendices to the Department’s primary submission), the Department is satisfied that the modelling undertaken is adequate and therefore that further modelling is not required. In relation to flushing, the Department is satisfied that the method adopted for the determination of retention times is satisfactory.
Human health and air quality

In its primary submission, the Department referred to issues raised by NSW Health in relation to impacts on human health, and in particular in relation to air quality and noise. Noise impacts are addressed in detail in section 2.3.2 above.

The Applicant has furnished additional information (Supplementary Submission to the Commission of Inquiry October 2004 Volume 2) responding to issues raised by NSW Health. The Department now considers that, in general, the human health impacts can be adequately addressed through conditions of consent, should the proposal be approved.

In relation to a request for more substantial sediment sampling, the Applicant has proposed, prior to commencement of dredging works, to undertake additional sampling, including deep core sediment sampling, with an extended suite of analytes. The Department is satisfied that this approach is acceptable. Consequently, should the proposal be approved, the Department would recommend that the additional sediment sampling be included as a condition of consent as agreed with DEC.

In its primary submission the Department referred to issues raised by both the Department of Environment and Conservation and Randwick Council in relation to odour impacts associated with dredging and reclamation. The Applicant has responded indicating that “it is not expected that there will be odour impacts associated with the dredging and reclamation, as the majority of dredged sediments will remain below the water surface during the construction phase. Dredged material would only be exposed to the atmosphere once the reclamation rises above the water surface. The sediments are primarily sandy and therefore odour impacts are not anticipated. However, mitigation measures to address any odours arising during the construction process can be incorporated into the Construction Environmental Management Plan.” The Department is satisfied with this approach. However, the Department would recommend that the Applicant review odour impact conclusions based on the findings of the substantial sediment sampling program.

Hazards

In its primary submission, the Department indicated that the Preliminary Hazard Analysis had adequately assessed hazard-related issues, subject to clarification of the risks associated with an increase in use of 40 foot containers carrying dangerous goods. The Applicant subsequently advised that

The off-site risk of the expansion of the port is primarily due to Class 2.3 goods, with minor contributions from Class 3 liquids and explosions of Class 1 and 5.1 materials. The contribution of Class 4.1 materials is minor due to the small quantities transported and the relatively small impact zone. The carriage of Class 2.3 goods is in a range of package sizes: viz. cylinders of tens of kg, drums of hundreds of kg and isolators containing a number of tonnes. The transport of cylinders and drums is within a container, which could be a 20’ container or a 40’ container.

In the PHA, the consequences of a drop of a container was considered to be the rupture of one of the packages. Thus, whether a 20’ containers or a 40’ container was dropped, the analysis would produce the same results. This means that the analysis in the PHA would be conservative as with larger containers, there would be fewer movements to transport larger quantities. With respect to the size of isolators, Sydney Ports have confirmed that the size of isolators used to transport Class 2.3 toxic gases is restricted to the 20’ container equivalent.

The potential for explosion of a larger container of a material that could be exploded in its entirety (e.g. Class 1, 3 or 5.1) would produce larger consequence distances. However, the change in consequence distances for a doubling of material from 20 tonnes to 40 tonnes is relatively small (of the order of 15 to 25 m) depending on the material and the end point of the calculations.

The Department considers this response to be reasonable and adequate, and that all hazard-related issues can be addressed through conditions of consent, should the project be approved.

Subsequent to the primary session of the COI, the Department has provided the Commission with additional information regarding hazards. This was provided through the Department’s reply to questions from the Commission. The Department was asked:

*Do matters raised in Botany Bay City Council’s submission on hazard and risk change the Department’s assessment of the hazards and risks associated with SPC’s proposal (Option 1)*?
The Department’s complete response is in Appendix A. In summary, the Department indicated it is satisfied that the risk assessment presented by the Applicant to date is reasonable and provides sufficient information to allow an informed decision to be made in relation to hazards and risk impacts. The Department considers that the concerns raised by Council are important matters that could, and should, form the underlying basis for conditions imposed on the development should it be approved by the Minister.

**Heritage**

In response to issues raised by the NSW Heritage Office concerning conservation of the Government Pier the Applicant has indicated that “the remains of the Government Pier, above and below water, and associated cultural deposits would not be disturbed during construction. Measures to protect the remains would be incorporated into the Construction Environmental Management Plan. The remains can be photographed and recorded prior to construction. Interpretation information would be developed at the detailed design stage.” The Department considers this response adequate and, should the proposal be approved, would recommend that the Applicant be required to develop in consultation with the NSW Heritage Office appropriate management measures for the remains of the Government Pier and associated cultural deposits.

**Cumulative Impacts**

In its primary submission, the Department requested that additional information be provided by the Applicant regarding the cumulative impacts of the proposal on the hydrodynamics of the Bay and wader birds. The Department review of additional information provided by the Applicant subsequent to the primary session is discussed in section 2.3.3 above of this report in regard to impacts of the proposal on wader birds (Species Impact Statement Peer Review).

Subsequent to the primary session, the Department has reviewed the peer review (by UNSW Water Research Laboratory) of the Applicant’s hydrodynamic modelling work. From this review the Department is satisfied that the modelling undertaken and conclusions made on bay wide impacts is adequate.

**Social and economic impacts**

In response to a request from the Department for further assessment of the likely impacts of the extra workforce on the area, the Applicant provided the following additional information “The new terminal has been estimated to generate about 3 700 full time equivalent jobs in 2024/25. Of this number, a maximum of 400 jobs would be created at the terminal. The remainder comprise transport and other industry related jobs which would not necessarily be based in the Botany area. The population within the Botany LGA is about 36 000 people (based on 2001 data). The 400 jobs on the terminal represent about a 1.1% population increase.” The Department considers this response to be acceptable.
Appendix B

Summary of Outstanding Environmental Issues Raised by DIPNR in the Revised Primary Submission to the Commission of Inquiry – October 2004

<table>
<thead>
<tr>
<th>Section</th>
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</thead>
<tbody>
<tr>
<td>7.1 Traffic, Transportation &amp; Infrastructure p60</td>
<td>The Department believes the proposed intersection upgrades, which are suggested for future implementation, should be undertaken within 5 years of any new container terminal opening.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Two new intersections are proposed to be constructed on Foreshore Road as part of the proposal: 1. the access to the new terminal and 2. the access to the new boat ramp. Both of these intersections will be constructed as part of the development. Only one intersection is proposed to be upgraded, should the need arise, this is the Botany Rd / Foreshore Rd / Penrhyn Rd intersection. It is proposed that this intersection be monitored and only upgraded if required by actual port traffic growth. It is noted that this intersection will play a small role in servicing the proposed expansion as it mostly services the existing port areas. Monitoring of this intersection will be undertaken to determine the need for any intersection upgrade.</td>
<td>✓</td>
</tr>
<tr>
<td>P60</td>
<td>There is potential for the need to provide additional right turn capacity at Botany Rd (east) into Botany Rd (south). This need will occur if the Applicant’s proposed 40% modal split objective is not achieved. The</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>It is proposed that this intersection be monitored and only upgraded if required by actual port traffic growth. It is noted that this intersection will play a small role in servicing the proposed expansion as it mostly services the existing port areas. Monitoring of this intersection will be undertaken to determine the need for any intersection upgrade.</td>
<td>✓</td>
</tr>
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<td></td>
<td>Department therefore considers that detailed monitoring of the modal split achievements and intersection performance would be required particularly during the construction and operation of the proposal to determine the need and timing of such an improvement to the intersection.</td>
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<tr>
<td>P62</td>
<td>The Applicant could be required to enforce a plan to ensure the use of rail freight facilities to achieve the Applicant’s proposed 40% rail modal split objective.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>This issue is being addressed by DIPNR through the Metropolitan Freight Strategy and the Freight Infrastructure Advisory Board. It is not considered an appropriate condition to be placed on the new terminal.</td>
</tr>
<tr>
<td>P62</td>
<td>The Department’s independent review of the EIS supplement identified future problems at a number of intersections within the study network. The Applicant would be required to agree on a suitable proportional contribution to the</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>The EIS clearly identifies the affected intersections and supporting works that would be required to be implemented as a result of the proposed expansion. No further maintenance contributions would therefore be considered necessary.</td>
</tr>
<tr>
<td>Section</td>
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<tr>
<td></td>
<td>maintenance of these problems.</td>
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<tr>
<td>P63</td>
<td>There is a need for a Construction and Operation Traffic Management Plan to be prepared by the Applicant in consultation with DIPNR, RTA, Botany and Randwick Councils and SSROC. The detailed requirements of such a management plan will need to be discussed with these stakeholders.</td>
<td></td>
<td></td>
<td>✅</td>
<td></td>
<td>Agreed. A Traffic Management Plan would be prepared and agreed at the appropriate time.</td>
</tr>
</tbody>
</table>
| P63     | The need for detailed design plans to be developed by the Applicant and approved by the RTA that demonstrate a number of the local intersections would operate with optimum level of service, including:  
  - FR/BR  
  - FR/GHD  
  - GHD/BR  
  - BR/Container Road Access                                                                                                                     |                      |                                     | ✅                                                          |                             | The only intersections that require detailed design are:  
  - The new boat ramp access from Foreshore Road  
  - The new terminal access from Foreshore Road  
  - Botany Rd / Foreshore Rd / Penrhynd Road intersection (should the need arise in the future)  

No other intersections are required to be upgraded as part of this proposal. Therefore, detailed design of the above intersections only would be undertaken in accordance with RTA requirements and approved by the RTA. |
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<tbody>
<tr>
<td></td>
<td>BR/Bumorah Point Rd</td>
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<td></td>
<td>BR/Beauchamp Rd</td>
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<tr>
<td>P63</td>
<td>The need for the Applicant to provide a safety audit for any road works, traffic management facilities, provisions for pedestrian and cyclists. The audit would need to be undertaken in accordance with RTA guidelines upon completion of works but prior to their operation and use.</td>
<td></td>
<td></td>
<td>✅</td>
<td></td>
<td>No further comment</td>
</tr>
<tr>
<td>P63</td>
<td>The need for a comprehensive “handbook” to guide drivers of port related vehicles on accepted routes, constraints to traffic and preferred hours of use and amenities on such routes prior to completion of the construction.</td>
<td></td>
<td></td>
<td>✅</td>
<td></td>
<td>No further comment</td>
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<td>Section</td>
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<tr>
<td>P63</td>
<td>The need for the applicant to establish a formal mechanism for continued liaison with the RTA, Botany and Randwick Council on matters relating to traffic control on heavy vehicle routes to ensure adequate enforcement of traffic management measures and optimum road operating conditions in the vicinity of the port area.</td>
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<tr>
<td>7.2 Noise p67</td>
<td>The Department considers that standard construction hours should be maintained, namely: Mon – Fri 7am to 6pm and Sat 8am to 1pm. (except for dredging)</td>
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</table>

No further action to be taken

Response

Supplementary Submission to COI – Oct 2004. Responses to DIPNR Primary Submission pg 2.
The EIS proposes construction 6 days per week from 7am to 6pm. If work hours were restricted, the construction timeframe would be required to be extended, thus extending the duration of impacts on residents. The noise impact assessment was undertaken on the basis of construction occurring at the northern end of the terminal. Noise impacts during construction of areas further away from residences would be less than those predicted.

A noise management plan would be prepared in consultation with DEC and residents. The Plan would take into account impacts on residents and ways in which such impacts can be minimised whilst minimising the overall construction timeframe.
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<tbody>
<tr>
<td>p71</td>
<td>Department supports DEC’s recommendation for an ongoing operational analysis.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
<td>No further comment.</td>
</tr>
<tr>
<td>p71</td>
<td>Barrier option 3 should be modelled to demonstrate the effect the barrier would have on mitigating construction noise and traffic noise and that a combination of barrier options 1 and a potentially reduced horizontal extent of barrier option 3 (subject to modelling) as best practice feasible and reasonable noise barrier measures.</td>
<td>✓</td>
<td></td>
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<td></td>
<td>A barrier on the northern side of Foreshore Road, extending the length of the acceleration and deceleration lanes for the new terminal access, will be modelled and the results provided prior to the COI resuming.</td>
</tr>
<tr>
<td>p72</td>
<td>A Port Traffic Noise management plan should, to avoid future land-use conflicts, holistically review traffic noise impacts for the</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td>Primary Submission to COI – May 2004, Section 8.3.2. SPC would prepare a Port Traffic Noise Management Plan in conjunction with operators that would consider possible traffic management measures such as traffic re-routing, traffic clustering, traffic re-scheduling and driver awareness programs, to manage the potential impacts of port traffic</td>
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<td></td>
<td>Port Botany Area in consultation with all relevant stakeholders, to identify long term solutions for the area.</td>
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<td></td>
<td>The rail noise assessment in the EIS was conducted by RailCorp. The assessment used “maximum levels” rail noise criteria presented in the ENCM. The ENCM also presents planning levels. The Department supports DEC’s position that an assessment of impact should focus on seeking to achieve the planning levels through the application of all feasible noise on residences and sensitive receivers. The Plan would focus on implementing positive actions, such as those listed above, as opposed to undertaking noise monitoring. The scope of the Plan can be addressed following any approval. It should however be noted that port related traffic represents between 1% and 8% of Port Botany precinct traffic. The increased truck movements due to the proposed expansion would not cause an increase in overall noise of more than 0.6dBA. This is an unnoticeable change in noise levels to the human ear.</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>P72</td>
<td>Supplementary Submission to COI – Oct 2004. Responses to DIPNR Primary Submission pg 4. It is understood the criteria used by RailCorp are the same as were used for the Marrickville-Cooks River upgrade and which were agreed with DEC. RailCorp is responsible for management and operation of the freight rail line. Rail noise is the responsibility of the rail manager and is subject to an Environment Protection Licence with DEC. This has been reinforced through DEC and RailCorps’ responses to questions raised at the Primary Hearing of the Commission of Inquiry. Further, the assessment being referred to is that for the duplication of the freight line between Botany Yard and Cooks River. The duplication of this section of the line would be subject to a separate approval process prior to construction. Noise mitigation measures would be considered as part of any</td>
<td>✓</td>
<td>✓</td>
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<td>and reasonable noise mitigation measures. If planning levels are not achievable then all reasonable or feasible noise mitigation should be provided. (Nb – Department considers that SPC’s original responses have not addressed this issue).</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>future approval process. DEC’s response to questions raised from the primary hearing of the Commission of Inquiry included: “The environment protection licence for the rail network [held by RailCorp] specifies noise goals for planning significant new works, which would include the duplication.” Supplementary Submission to COI – Oct 2004. Responses to DIPNR Primary Submission pg 4. A Working group has been proposed to address rail noise issues generated by the Port Botany Expansion, and such matters could be included in the issues addressed by the Group.</td>
<td></td>
</tr>
<tr>
<td>P73</td>
<td>The applicant should be required to assess the impacts of rail noise and identify appropriate noise mitigation measures to the satisfaction of DEC. It is considered that this additional assessment would be completed prior to construction as a minimum.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>EIS Volume 2 – Chapter 22, Section 22.4.4 The impact of rail noise has been assessed and identified that the only section of rail line in which additional rail noise would be generated, above that predicted as part of infrastructure works, is the Botany Yard to Cooks River section of rail line. The additional rail noise by the proposed port expansion is about 2dBA along this section of line, which could potentially affect an additional 10 residences. Rail noise is the responsibility of the rail manager and is subject to an Environment Protection Licence with DEC. This predicted increase would need to be considered as part of any proposal for duplication of this section of the line by RailCorp. (Refer to previous response) Supplementary Submission to COI – Oct 2004. Responses to DIPNR Primary Submission pg 4. A Working group has been proposed to address rail noise issues generated by the Port Botany Expansion, and such matters could be included in the issues addressed by the</td>
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<tr>
<td>7.3 Flora &amp; Fauna</td>
<td>i) What level of saltmarsh cover is deemed acceptable? ii) What is the likelihood of this cover being established in previously specified timeframes? iii) What are the consequences of saltmarsh not being established? iv) How will any risk be evaluated and mitigated? v) How will successful ecological function of saltmarsh be defined?</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td>i &amp; ii &amp; v) Letter to L. Ewins, DEC, 3/12/04 Success criteria for the habitat enhancement works would be agreed with relevant government agencies as part of the detailed design of the works and in preparing a monitoring and management plan for the area. The criteria would likely use the existing environmental status as the benchmark for 'no negative impact', together with comparison of relevant reference sites and would include time periods for determination of success. Success would be agreed prior to any works commencing. iii &amp; iv) Penrhyn Estuary Risk Assessment – 15 September 2004, by URS. Included in Volume 1 of the Supplementary Submission to the EIS. The failure of saltmarsh transplanting and establishment was considered as part of the risk assessment. The assessment identified that in the ‘do nothing’ scenario there would likely be a long term loss or reduction in the existing saltmarsh habitat as it becomes colonised by mangroves and that this would have a moderate consequence on both the ecosystem and shorebirds. A loss of saltmarsh would lead to a loss of some shorebird roosting habitat which may result in some species avoiding roosting at the estuary. iv) Primary Submission to COI, Volume 1, May 2004 – Section 9, pg 9-10 There is confidence that the saltmarsh transplanting / planting will be successful. A number of local examples of successful rehabilitation are presented in the Primary Submission to the COI and key success factors are also</td>
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<tr>
<td>Table 1, pg 83</td>
<td>Additional reference to the more recent information on areas of bay saltmarsh and mangroves is available and is still required to confirm the Applicant’s expectation that conclusions are unlikely to change.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</table>

Apart from Section 5.3.7 of Volume 6 of the Port Botany EIS, nearly all references to more recent mapping of seagrasses, saltmarshes and mangroves in Botany Bay use the NSWFW Final Report Series No. 11 (Watford and Williams 1995). This includes the Primary Submission and Session Presentation for the Commission of Inquiry (e.g. Slide 13 in presentation by M. Lincoln Smith). Areas mapped by West et al. (1985) and Watford and Williams (1995) in Botany Bay are compared as follow:

<table>
<thead>
<tr>
<th>Vegetation type</th>
<th>West et al. (1985) – km²</th>
<th>Watford &amp; Williams (1995) – km²</th>
<th>%: W&amp;W/West x 100</th>
<th>% difference between studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saltmarshes</td>
<td>1.601</td>
<td>1.573</td>
<td>98.25</td>
<td>- 1.75</td>
</tr>
<tr>
<td>Mangroves</td>
<td>3.996</td>
<td>4.227</td>
<td>105.78</td>
<td>+ 5.78</td>
</tr>
</tbody>
</table>

The differences in estimated areas between the two studies are very small and may represent experimental error. Hence, using either study makes virtually no difference to the conclusions drawn in Section 5.3.7 of Appendix 6 in the EIS. Moreover, the trends identified between the two times (if they do not, in fact, represent experimental error) are consistent with points made in the EIS and at the COI, namely, that saltmarshes are declining and mangroves increasing in the region. This gives added support to the proposed rehabilitation of Penrhyn Estuary, in that there would be benefits in enhancing saltmarshes at the expense of the small stand of mangroves that has recently developed there.
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<tr>
<td>Table 1, pg 84</td>
<td>Detailed design of the enhancement works would need to be agreed with the Department and DEC prior to construction. Monitoring of inundation levels of existing mudflats will be required to ensure levels are not affected. Details of appropriate monitoring would need to be determined prior to construction.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>No further comment.</td>
</tr>
<tr>
<td>Table 1, pg 84</td>
<td>A contingency plan is required in the event that the sand/mud flat is eroded to a level which reduces its ecological value or role in the habitat enhancement works.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>No further comment.</td>
</tr>
<tr>
<td>Table 1, pg 85</td>
<td>Further information on the consequences of increased turbidity on the light climate in areas of existing and proposed transplanted seagrass is still required.</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>A contingency plan would be developed as part of the management and monitoring plan associated with the proposed habitat enhancement work. Such plan would be agreed with relevant government agencies prior to commencement of construction.</td>
<td>Port Botany Expansion EIS (November 2003), Volume 1, Section 16.4.2 &amp; Appendix N, Section 5.2.2.1 &amp; Appendix J, Section 7.2.3, Primary Submission to COI (May 2004), Section 9.3.2 &amp; Section 12.4.2 Information on turbidity impacts associated with construction and operation has been previously provided throughout the EIS and subsequent documentation. The information</td>
</tr>
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confirms that turbidity would be unlikely to affect the proposed transplanted / colonised area of seagrass.

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</table>
| Table 1, pg 85 | Although the Applicant claims this loss of shallow sandy habitat due to the port expansion is small on a Bay wide scale, less than 2.4%, the Department still requires information on the consequence of the 2.4% loss. The subject of the Departments comment is the area to be dredged and reclaimed within Botany Bay and does not refer to intertidal areas. Therefore the applicant’s response needs to be modified to address the appropriate habitat and its full extent. | ✓ | ✓ | Port Botany Expansion EIS (November 2003), Appendix N, Section 5.3.3 & Primary Submission to the COI (May 2004), Section 9
The loss of 130 ha of shallow sandy habitat referred to by DIPNR is assumed to comprise approximately 60 ha of seabed that would be reclaimed and 70 ha that would be dredged. It should be noted that most of this area is not shallow habitat (being deeper than -3.5m LAT). The 60 ha to be reclaimed comprises about 33 ha of deep habitat (Figure 8.3, Volume 1 of the ES), which was the basin dredged originally to obtain fill for the construction of parallel runway and hence represents a (relatively) recently disturbed habitat that is no longer shallow and sandy. The remaining 27ha to be removed due to reclamation would represent a partial loss of aquatic productivity within Botany Bay. This would partially be compensated for by colonization of hard surfaces associated with the terminal, which extend throughout the water column. These hard surfaces would consist of rock armouring, steel piles and concrete which are all known to become readily colonized by algae and invertebrates. The 70 ha to be dredged to facilitate shipping would have ecological characteristics distinct from some of the shallow habitat removed, but would nevertheless contain soft sediments that would be colonized by a range of invertebrate species particularly as the dredged area would be connected to the main navigation channel (and not isolated). |
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| P86     | SIS Peer Review by Wetlands International The review does not discuss:  
   i) what are satisfactory numbers of each bird species that should be present to indicate whether the objectives have been satisfied or failed?  
   ii) Timeframe should the wetland creation enhancement be completed in to allow the best use by birds? | ✔ | ✔ | ✔ | i) Review of the Potential Impacts of the Proposed Port Botany Expansion on Shorebirds, Final Draft, October 2004 by Doug Watkins. Included in Volume 1 of the Supplementary Submission to the EIS. Section 5.3 of this report proposes benchmark values for the abundance and occurrence of key shorebird species at Penrhyn Estuary. These values are put forward as indicators of "no negative impact" on shorebirds at Penrhyn Estuary.  
ii) The staging proposed to be undertaken for the habitat enhancement works has been proposed to minimise disruption to the birds. Timing of the construction works and staging will be dealt with as part of the detailed design of the works which would be agreed with relevant government agencies prior to construction.  
iii) This would be dealt with as part of the detailed design and development of success criteria for the habitat enhancement works which would be agreed with relevant government agencies prior to construction. | Cumulatively, there would be a reduction of the shallow habitat however there will remain a very large area of shallow habitat distributed over much of Botany Bay. |
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<td></td>
<td>iii) What levels/concentrations of food organisms are required for birds to be able to use the area effectively for feeding?</td>
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<tr>
<th>Penrhyn Estuary Risk Assessment General additional information requirements include:</th>
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<tr>
<td>i) Detailed definition of the various risk levels</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>ii) Detailed reference to previous studies and literature values</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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- Specific descriptions of each of the risk levels are provided in the report on pages 2-3 to 2-5.
- Given the extensive literature use and extensive information compiled as part of the project it would be an extremely lengthy process to re-state all relevant information in this report. Instead, reference has been made to the primary document location in which the matter is discussed in greater detail. There is no intention to expand on this listing.
- Likelihood definitions are provided in the report on page 2-6.
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<td></td>
<td>iii) Detailed definition of likelihood descriptors</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>iv) SPC can confirm that it will be responsible for ensuring the long term maintenance of Penrhyn Estuary.</td>
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<td></td>
<td>Specific additional information requirements include:</td>
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<td></td>
<td>iv) The applicant is required to confirm long term maintenance (of Penrhyn Estuary) will occur and identify the responsible body for this long term maintenance</td>
<td>✓</td>
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<td></td>
<td>v) Increased frequency of shipping to the area and associated likelihood of microalgae being brought into the area by</td>
<td>✓</td>
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<td>Refer to Risk Issue – Introduced species for the Assessment Endpoint – maintenance of Penrhyn Estuary Estuarine Ecosystem in the table in Appendix B.</td>
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<td>vi) Recent observations and several presentations at the COI have noted that there is an increasing amount of mangroves in Penrhyn Estuary, with a particularly large germination and initial establishment of seedlings there in the past year. Without management intervention mangrove habitat is likely to continue expanding in the estuary over the next 5 to 10 years, threatening the area’s saltmarsh habitat and utility for shorebirds. The proposed habitat enhancement of Penrhyn Estuary as part of the proposed port expansion recognizes these issues and provides a structured basis for addressing them.</td>
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<td>b) Two scenarios were discussed in the risk assessment:</td>
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|         | ballast water transfer is required to be addressed by the Applicant in the risk assessment.  
   vi) Mangrove colonisation: 
   o a) What are the time frames within which the likelihood has been determined?  
   o b) The risk register and comments should provide an indication of the level of habitat enhancement that is 
| ✓       | ✓       | ✓                   |                                   |                                                          |                             | • Base Case – assumes mangrove removal and seagrass transplanting occurs, public access to the Estuary is restricted to a boardwalk and stormwater quality improvement devices are installed.  
   • Habitat Enhancement – assumes the entire habitat enhancement plan, as outlined in the EIS takes place. The risk assessment found that the habitat enhancement works resulted in a reduced level of risk when compared to the Habitat Enhancement situation. Sydney Ports considers that the entire habitat enhancement plan is required to be implemented in order to ensure success of the estuary to achieve the stated ecological objectives.  
   c) Supplementary Submission to EIS, August 2004, Section 6, Outline EMP, pg 22  
   A Vegetation Management Plan would be prepared detailing methodologies for mangrove removal and control. This would be undertaken in consultation with relevant government agencies.  
   vii) The statement regarding the current ecological value of seagrasses in the study area was based on: 
   1. the ongoing erosion of the shoreline at the southeastern end of Foreshore Beach, which is likely to be causing a decline in the area of seagrasses there; and  
   2. the morphological characteristics of the seagrasses |
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<td></td>
<td>c) The register should also provide an indication of the frequency that mangroves will need to be removed and what levels of mangroves are acceptable without removal.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>in the study area, which tend to include short leaves and often sparse shoot density. These characteristics are likely lead to lower primary productivity and habitat which is not structurally complex, and hence of less value for fish and invertebrates.</td>
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<td>b) The establishment of seagrass habitat in the area proposed would have improved ecological value compared to the current conditions which is limited (refer to previous answer). This conclusion is reached because:</td>
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<td>1. the preparation of the habitat would have a suitable substratum and be at a suitable depth for growth.</td>
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<td>2. The area set aside for seagrasses would be sheltered by the new terminal, and hence not subject to turbulence or erosion.</td>
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<td>3. Seagrasses establish naturally in many areas created by human activity, most notably in canals where the substratum consists of soft sediment at an appropriate depth. These areas can be highly productive (see Lincoln Smith et al., <em>Marine and Freshwater Research</em>, 46: 715-721, 1995).</td>
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<td></td>
<td>c) Letter to L. Ewins, DEC, 3/12/04 Success criteria for the habitat enhancement works would be agreed with relevant government agencies as part of the</td>
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<td></td>
<td>limited ecological value, including a basis for the conclusion.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>detailed design of the works and in preparing a monitoring and management plan for the area. The criteria would likely use the existing environmental status as the benchmark for ‘no negative impact’, together with comparison of relevant reference sites and would include time periods for determination of success. Success would be agreed prior to any works commencing. d) There is confidence that the seagrass compensatory habitat, rather than simply the transplanting alone, would have a high chance of success. Should the transplanting not be successful, seagrass would establish naturally where the environment is suitable for growth. Seagrasses establish naturally in many areas created by human activity, most notably in canals where the substratum consists of soft sediment at an appropriate depth. These areas can be highly productive (see Lincoln Smith et al., <em>Marine and Freshwater Research</em>, 46: 715-721, 1995). The key to successful creation of compensatory habitat for the proposed Port Botany expansion will be facilitating growth by a combination of natural colonization and transplanting. viii) Port Botany Expansion EIS (November 2003), Appendix N, Section 4.6.3 Introduced species associated with commercial shipping are primarily associated with ballast water and hull fouling. At Port Botany, ships are not allowed to clean their hulls therefore there is a limited chance that fouling organisms are transferred to Botany Bay whilst vessels are in port. With respect to ballast water discharge, container vessels in</td>
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<td>o c) What level of seagrass establishment is considered successful, including what abundance and composition of fish using the site as a nursery ground</td>
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<td>✓</td>
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<td>o d) Justification of why the likelihood of failure of seagrass transplanting is given as low.</td>
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<td>Port Botany typically do not discharge ballast water. However, any discharge of ballast water is required to be approved by the Australian Quarantine Inspection Service (AQIS) who looks at the risks associated with such discharge. This issue is therefore most appropriately managed on a national basis by AQIS than individually by SPC. ix) All of the issues raised with respect to the new intertidal flats will be addressed as part of the detailed management and monitoring plan for the habitat enhancement works which will be prepared prior to construction and would be agreed with relevant agencies prior.</td>
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<td>viii)</td>
<td>Provide details of measures proposed to monitor introduced species and risk associated with such species.</td>
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| ix)     | New intertidal flats:  
  o Provide a clearer definition of levels of acceptable erosion  
  o An indication at what stage is | | | | | |
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<td>management intervention required o Need to address subsidence of constructed banks and beds as this could result in pooling and create areas with poor water quality.</td>
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<tr>
<td>P88</td>
<td>More detail is required with respect to monitoring associated with aquatic and terrestrial ecology.</td>
<td></td>
<td></td>
<td>✓</td>
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<td>This will be addressed as part of the detailed management and monitoring plan for the habitat enhancement works, which will be prepared prior to construction and would be agreed with relevant agencies.</td>
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<td>P89</td>
<td>The department requires that the applicant provide detail of alternative compensatory habitat options.</td>
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<td>✓</td>
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<td></td>
<td>Letter to L. Ewins, DEC, 3/12/04 from C. Rudd (SPC) If, after evaluation of the Stage 1 habitat enhancement works, it is determined that the works have not been successful and that further works would also be unlikely to be successful, SPC would provide funding for compensatory conservation outcomes that are consistent with the Green Off-sets draft concept paper prepared by the EPA (2002). SPC would work together with DEC to identify appropriate projects for funding and agree suitable equivalent funding arrangements, prior to construction works commencing.</td>
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<td>Groundwater P94</td>
<td>The continuation of groundwater monitoring following completion of the proposed port</td>
<td></td>
<td></td>
<td>✓</td>
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<td>The SPC EIS identifies negligible changes in groundwater levels as a result of the proposed expansion. However, since lodging the EIS, an EIS has been released by Orica associated with pumping and treating of contaminated</td>
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### Department of Infrastructure, Planning and Natural Resources

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<td>expansion should be extended beyond the 12 months indicated in the EIS. Given the current drought conditions the short timeframe proposed by the applicant may not adequately assess the potential impacts predicted in the modelling. Also, continuous groundwater level recorders should be utilised instead of monthly manual readings.</td>
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<td>groundwater. The Orica EIS identifies reductions in groundwater levels in the residential areas immediately upstream of Foreshore Beach of between 0.2-0.4m associated with the remediation works. This is in comparison with a predicted 0.01-0.04 rise in groundwater levels associated with the proposed port expansion for the same area. The Orica EIS confirms that the changes associated with the port expansion will be insignificant in comparison to the changes associated with their works. Therefore it is considered that any groundwater monitoring is more appropriately undertaken by Orica and is not required to be undertaken by SPC.</td>
</tr>
<tr>
<td>P94</td>
<td>Department recommends monitoring during construction and for a minimum period of 5 years following completion. A data review should be undertaken immediately following construction and again at the end of the 5 year period.</td>
<td></td>
<td></td>
<td>✓</td>
<td>See above response.</td>
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<tr>
<td>P94</td>
<td>Groundwater quality monitoring should be undertaken in</td>
<td></td>
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<td>✓</td>
<td>Port Botany Expansion EIS, Appendix L, Groundwater Assessment by accessUTS, March 2003 SPC’s EIS confirms that there would be no impact on</td>
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<td>conjunction with surface water monitoring.</td>
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<td>P94</td>
<td>The EIS has not adequately addressed issues relating to presence of any groundwater dependent ecosystems at or in the vicinity of the proposed port expansion area. The Department therefore recommends assessment of ecosystems in the vicinity of the proposed development be undertaken. Monitoring of these ecosystems should be undertaken during and after construction.</td>
<td>✓</td>
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<tr>
<td>Hydrodynamics &amp; Coastal</td>
<td>The Department is concerned that the groundwater quality associated with the proposed expansion, particularly as there is a negligible change in groundwater level and flow direction. Further, the groundwater quality is being monitored by Orica, as part of the process of managing the groundwater contamination issues. Therefore it is considered that any groundwater monitoring is more appropriately undertaken by Orica, as currently occurs, and is not required to be undertaken by SPC.</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>Port Botany Expansion EIS, Appendix L, Groundwater Assessment by accessUTS, March 2003 This report identifies only one location with potential groundwater dependent ecosystems, within the Sir Joseph Banks Park Pond. The outcomes of the work conclude that a predicted rise in water level in the pond of 0.06m is much lower than the natural range of variation therefore would be unlikely to impact on any groundwater dependent ecosystems. Further, the impact of the Orica remediation on the Ponds will have the effect of dropping groundwater levels in the ponds by up to 0.15m due to the groundwater pumping. Therefore, any impact associated with the proposed expansion would be insignificant compared with the Orica remediation. It is considered therefore that any assessment and monitoring of groundwater dependent ecosystems is more appropriately undertaken by Orica and is not required to be undertaken by SPC.</td>
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SPC letter to D Fitzgibbon (DIPNR) dated 16 April 2004, Item 3.1
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<td>Processes</td>
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<td>water level boundary model applies to Penrhyn Estuary and therefore does not reliably describe the behaviour of the whole waterway and in particular the waterway between the proposed development and the Third Runway. The Department requires detailed modelling to extend beyond the development area by a substantial margin, incorporating the waterway between the proposed development and the Third Runway.</td>
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<td>This correspondence described how a transfer boundary prepared from a previous whole of Bay simulation was applied to the Penrhyn Estuary fine grid model. The outcome of that simulation was compared with that from a similar simulation undertaken using a single Botany Bay tidal signal boundary. There was little difference between the results.</td>
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<td>P103</td>
<td>Flushing Times To determine retention times some form of particle tracking method must be used. In many contaminant issues</td>
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<td></td>
<td>✓</td>
<td></td>
<td>There are a number of ways that flushing times can be estimated using numerical models. One of those is to use particle tracking methods, but this is by no mean the most common method. Rissik (DIPNR) et al (2003) do not use a particle tracking method. They describe their method as follows:-</td>
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<td>concentrations can be irrelevant as a single particle can be important so the transport of these particles is the issue to look at, not dilution (or concentration)</td>
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<td>“Determination of Flushing Times Realistic flushing times were determined by running the hydrodynamic/dispersion model for sufficient time for an initially uniformly distributed conservative tracer to decrease to a local concentration of approximately 50%” This approach was adopted by Lawson &amp; Treloar in order to be consistent with that approach.</td>
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<td>P104</td>
<td>The Department still requires information on changes to the trapping mechanism of the northwest part of the bay (the development area) and in particular whether the proposed development works will affect how water moves into and out of the existing port area. This requires detailed modelling around the port area, with good boundary conditions.</td>
<td>✔️</td>
<td></td>
<td>✔️</td>
<td></td>
<td>It is assumed that the “trapping mechanism” reference relates to sediments as this term is not applied in the context of nutrients. The results of the nutrient modelling undertaken for the EIS, using the verified north-west Bay model for pre- and post-port development cases, clearly quantifies the expected changes in concentrations. The sediment modelling has shown that volumes of silt delivered to the estuary are small and that the distribution of those fine sediments would essentially remain in locations similar to present locations. The matter of boundary conditions has been addressed above. No further modelling is therefore considered necessary.</td>
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<td>P105</td>
<td>Movement of Spills While the approach used is satisfactory, particle tracking needs to be monitored from a</td>
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<td>✔️</td>
<td>SPC letter to D Fitzgibbon (DIPNR) dated 16 April 2004, Item 3.2 It is agreed that single releases at the beginning of the ebb or flood tide are not representative of all possible spill scenarios</td>
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<td>Human Health P108</td>
<td>number of source points and for a number of release times covering different stages of the tide, including different tide ranges. A single release at the beginning of the ebb or flood tide is not representative of possible scenarios. Use of the detailed model to compare trapping in the new development area should be undertaken.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>however under the Port Safety Operating Licence, SPC have a responsibility to respond to such spills within 30min of notification. SPC has met this licence requirement consistently since the licence was established in 1995. This rapid response time reduces the need for more detailed analysis associated with spill movement.</td>
<td></td>
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<tr>
<td>P108</td>
<td>The Department supports NSW Health’s request for further studies on the impacts due to offsite induced emissions, long term impacts and peak nitrogen dioxide impacts.</td>
<td>✓</td>
<td>✓</td>
<td>Supplementary Submission to COI – Oct 2004. Responses to Department of Health. Additional responses to the issues raised by Department of Health have been included in the supplementary submission to address the issues raised by the Department.</td>
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<tr>
<td>P108</td>
<td>Further investigation on the noise impacts on sensitive noise receptors is required, especially data from the closest receptor – Sir Joseph Banks Park / Golf Course</td>
<td>✓</td>
<td>✓</td>
<td>Supplementary Submission to COI – Oct 2004. Responses to Department of Health. Additional responses to the issues raised by Department of Health have been included in this document to address the issues raised by the Department.</td>
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<tr>
<td>P109</td>
<td>The Department supports NSW Health’s request for a more substantial sediment sampling protocol including more deep core sediment sampling and characterisation for the full range of chemicals in each sample.</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>Supplementary Submission to the EIS, August 2004, Section 1. Additional sampling, including deep core sediment analysis, with an extended suite of analytes has been proposed to assess sediment quality prior to commencement of dredging works. Details of the proposed sampling program were provided to DIPNR in a letter dated 13 April 2004 addressed to D. Fitzgibbon from Colin Rudd (SPC), a copy of which is included in the Supplementary Submission to the EIS, August 2004.</td>
</tr>
<tr>
<td>P109</td>
<td>The Department recommends that the latest information from Orica regarding groundwater be used in conducting further modelling including an assessment of the impact of VHCs on air quality particularly the potential effect on those using the proposed wetland boardwalk. A more thorough assessment of the potential impact of odours on both users of the boardwalk and on nearby residents is recommended.</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>A response to this issue was provided in a letter to D. Fitzgibbon (DIPNR) from Colin Rudd (SPC), dated 15 April 2004.</td>
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<tr>
<td>Hazards &amp; Risks P113</td>
<td>Regular updating of the cumulative risk contours using actual data should be carried out as per recommendation 1.4 of the Port Botany Land Use Safety Study.</td>
<td></td>
<td></td>
<td>✅</td>
<td></td>
<td>Supplementary Submission to the EIS (August 2004), Section 5</td>
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<td>Recommendation 1.4 of the Port Botany Land Use Safety Study requires updating of the cumulative risk contours in light of decisions on future developments in the port and changes in external factors. The cumulative risk associated with the proposed port expansion has been addressed in the Supplementary PHA. SPC considers that re-assessment against the cumulative risk contours would be appropriate should amendments to the FHA be required as a result of changes in actual trade compared to predicted trade for the new terminal. Such re-assessment would be undertaken in a similar way to that done in the Supplementary PHA. Any remodelling of the entire port estate would be subject to discussions between SPC and DIPNR outside of this development application as the original work was done collectively. It is not considered to be an appropriate or relevant condition to be placed on the approval for the new terminal.</td>
</tr>
<tr>
<td>P114</td>
<td>The department considers that additional risk reduction measures to reduce the risks to as low as reasonably practicable should be implemented. The applicant will need to prepare a final hazard analysis including risk reduction measures for</td>
<td></td>
<td></td>
<td>✅</td>
<td></td>
<td>A final hazard analysis (FHA) would be prepared for the new terminal operations. It is understood that FHA’s are usually undertaken following the commencement of operations so that actual data can be used to validate the assumptions used in the PHA. It is therefore considered appropriate to undertake the FHA following a period of operation of the new terminal. Additional risk reduction measures would only be required should the FHA indicate that risk criteria could not be met.</td>
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Supplementary Submission to the EIS (August 2004).
### Section 5

The supplementary PHA shows that the risks associated with operation of the new terminal meet the relevant risk criteria. As such, additional mitigation measures are not considered to be required at this time.

Imposing restrictions on locations of cargo constrains the efficiency of terminal operations and impedes operational logistics. This would particularly restrict the ability of any new operator to use the new terminal area as efficiently as the operators of the current Botany berths. Sydney Ports would only anticipate the use of such measures as a last resort where current criteria could not be met.

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| P114    | Implementation. Suggested risk reduction measures would include the exclusion of class 2.3 toxic gasses and class 6.1 toxics from the northern half of the proposed extension. Such a measure is expected to reduce societal risk and also shift the individual risk contours away from the residential areas to the north of the proposed extension. | ✓ | ✓ | | | Section 5
The supplementary PHA shows that the risks associated with operation of the new terminal meet the relevant risk criteria. As such, additional mitigation measures are not considered to be required at this time.

Imposing restrictions on locations of cargo constrains the efficiency of terminal operations and impedes operational logistics. This would particularly restrict the ability of any new operator to use the new terminal area as efficiently as the operators of the current Botany berths. Sydney Ports would only anticipate the use of such measures as a last resort where current criteria could not be met. |
<p>| P114    | The Final Hazard Analysis would be required to be updated at 5 year intervals to track actual trends in dangerous goods throughput and monitor risk levels. | | | ✓ | | Sydney Ports is the regulatory authority for dangerous goods in port areas at Sydney and Botany and dangerous goods are required to be lodged into a computer system operated by Sydney Ports. SPC would accept a condition that required periodic reviews of actual dangerous goods trade at the new terminal against those predicted in the PHA. It is however only considered to be necessary to update the FHA should the actual trade data differ from those predicted in the PHA/FHA and create the potential for additional risks. |
| P114    | The revised PHA does not clearly indicate if a significant proportion of dangerous goods is likely to be transported | ✓ | | ✓ | | A response on this issue was recently provided via email from Roy Garth (SPC) to Sohan Fernando (DIPNR) on 1/12/04 and forwarded by Marika Calfas (SPC) to Gordon Kirkby (DIPNR) the same day. |</p>
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<td>P116</td>
<td>Consent conditions should require public consultation to achieve community acceptance of the proposed ERIMP.</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>Supplementary Submission to the COI, August 2004, Volume 2, NSW DEC, page 18. The ERIMP is required to be prepared by the port terminal operator together with SPC and emergency services organisations. The purpose of the Plan is to outline actions to be taken in the event of an emergency at the port for the safety of the workers, environment and community. This is most appropriately achieved through agreement between the terminal operator, SPC and emergency services organisations. A condition requiring community acceptance of the plan is therefore not considered to be appropriate. SPC would however agree to community liaison associated with the ERIMP and would inform the community of the Plan.</td>
</tr>
<tr>
<td><strong>Air Quality</strong></td>
<td><strong>P128</strong></td>
<td>The Department is concerned that the applicant did not address odour impacts in the EIS and concurs with the DEC and Randwick Council recommendation that</td>
<td></td>
<td>✓</td>
<td></td>
<td>It is not expected that there will be odour impacts associated with the dredging and reclamation as the majority of dredged sediments will remain below the water surface during the construction phase. Dredged material would only be exposed to the atmosphere once the reclamation rises above the water surface. The sediments are primarily sandy and therefore odour impacts are not anticipated however, mitigation measures to address any odours arising during the</td>
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<td>odour issues be addressed and mitigated.</td>
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<td>P128</td>
<td>NSW Health considers there is still insufficient information on which to assess population health impacts, outlining where information gaps exist. The Department requires an additional response from the Applicant addressing the information gaps outlined by NSW Health.</td>
<td>✓</td>
<td>✓</td>
<td>Supplementary Submission to the COI, August 2004, Volume 2, NSW Department of Health, pages 1 to 5. Responses to the concerns raised by NSW Health are provided in the Supplementary Submission to the COI.</td>
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<td>Heritage</td>
<td>Heritage recording, protection and conservation methods (for the Government Pier) would need to be developed to meet the requirements of the NSW Heritage Office as indicated in the Heritage Office submission.</td>
<td>✓</td>
<td>✓</td>
<td>Primary Submission to the Commission of Inquiry, Volume 2, Appendix C, Heritage page 3. It has been previously stated, in response to the Heritage Office's Submission to the EIS, that there is not intended to be any ongoing conservation of the remnant piles. The piles are not of a significance to warrant such a requirement and there are only a few piles remaining. There has been no attempt to conserve the piles to date and as a result the remains of the piles are of limited quality. Without interpretation it would be impossible to determine that the piles were of any former significance.</td>
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### Surface Water Quality

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<td><strong>Dissolved oxygen modelling</strong></td>
<td>The department still has concerns regarding the methods and literature values underpinning this analysis, the model outputs and its conclusions. The department does not support a substantial reduction of the seagrass area and requests new DO modelling that addresses the Department’s concerns regarding methods, input values and model outputs.</td>
<td>✓</td>
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<tr>
<td><strong>P137</strong></td>
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SPC proposes that the remains of the Government Pier, above and below water, and associated cultural deposits would not be disturbed during construction. Measures to protect the remains would be incorporated into the Construction EMP. The remains can be photographed and recorded prior to construction. Interpretation information would be developed at the detailed design stage.

The dissolved oxygen modelling was undertaken at the request of government agencies (including DIPNR) to investigate the impact on diurnal oxygen variation in Penrhyn Estuary following the establishment of the seagrass beds proposed as part of the habitat enhancement plan. The key purpose of this modelling was to address the matter of the potential for anoxic conditions to be observed. This investigation was not focused on dynamic modelling of the whole ecosystem. Photosynthetic algae and macro-algae processes were included in the modelling but were ‘fixed’ processes. That is, the biomass remained constant throughout the simulation. Algae biomass representative of expected ambient conditions were adopted. Biological Oxygen Demand (BOD) reflective of ambient conditions was also included in the model.

All simulations indicated that the seagrass beds were unlikely to cause Penrhyn Estuary to become anoxic during night conditions. SPC does not intend to reduce the seagrass area from the proposed 8ha. The short periods of supersaturation caused by the 8ha of seagrass have not been identified as being of concern to the seagrass or...
If flushing time is sufficient to ensure the risk of phytoplankton blooms is in fact minimal, then it seems contradictory that DO values would become supersaturated.

The conclusion that the risk of phytoplankton blooms is minimal is not based on the seagrass DO modelling, but rather, is due to the flushing time of Penrhyn Estuary being significantly lower than the effective doubling rate of algal species as reported by Rissik et al (2003).

P137 The Department seeks estimates of the likely reduction in nutrient load of the SQIDS or case studies where they have been successfully used in similar circumstances.

P138 The Department still questions the validity of applying ANZECC standards to Penrhyn Estuary. Further investigation of the application of ANZECC standards to the proposed development area may be required.
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<td>P138</td>
<td>The placement of sediment and litter traps within the proposed seagrass rehabilitation area covers a significant area previously allocated to seagrass rehabilitation. The status of this proposed layout needs to be clarified.</td>
<td>✓</td>
<td></td>
<td></td>
<td>✓</td>
<td>It is not clear what plan is being referred to in the comment. However, the locations of the proposed sediment and litter traps are shown on Figure 13.1c of the Primary Submission to the Commission of Inquiry, Volume 1. The traps are proposed to be located where Springvale and Floodvale Drains discharge to Penrhyn Estuary. This is not within the proposed seagrass area, which is identified on the same plan. Therefore the noted concern does not arise.</td>
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<tr>
<td>P138</td>
<td>Sensitivity testing (of Manning n values) is required to be carried out prior to construction to explore limits of the difference in flood level between the existing and post proposal situation. Two scenarios are required to be explored:  - Manning n = 0.02 for the channel section and 0.07 for the floodplain section  - Manning n = 0.05 for both the channel section and the floodplain</td>
<td></td>
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<td></td>
<td>✓</td>
<td>Sensitivity testing of Manning’s n is not considered necessary as the Mansing value selected (0.03) is considered to be reasonable for the modelling. This number has been supported in the peer review of the hydrology and hydraulics work undertaken by Professor Ron Cox of the University of NSW Water Research Laboratory. (A copy of the peer review is attached.) Further, the hydraulic study is a difference study and therefore the relative differences with altered Manning’s n would likely be of the same order.</td>
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<td>P139</td>
<td>EMP</td>
<td></td>
<td>√</td>
<td></td>
<td></td>
<td>An EMP would be prepared for the project in consultation with relevant agencies. The detail noted in the statement would form part of the detailed design and management and monitoring for the habitat enhancement works, which would be agreed with DEC prior to construction works taking place.</td>
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<tr>
<td>Socio-economic impacts</td>
<td>P153</td>
<td>Some compensation is required for the loss of access to Foreshore Beach by users other than the boat ramp users. The Department considers that the applicant should meet</td>
<td></td>
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<td>All of Foreshore Beach will continue to be accessible for recreational purposes by the community. The location of various uses along the beach would change ie. swimming will be restricted to the north-western end of the Beach and public access to Penrhyn Estuary will be restricted to a boardwalk to allow viewing of migratory birds without disturbing them. Improved boat ramp and car parking facilities will also be provided which will improve accessibility</td>
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with both Botany and Randwick Councils to establish some sort of compensatory measures which would benefit the community.

To Botany Bay by boat users. Some uses, eg. windsurfing, may need to relocate to other places locally such as Yarra Bay or Brighton Beach however overall, the proposed improvements to amenity and access are expected to more than compensate for this small loss of use.

Further, the proposed works would in fact increase access to the Beach by providing an overpass connecting to Sir Joseph Banks Park across Foreshore Road and a pedestrian crossing across Foreshore Road also connecting to the Park.

SPC is therefore of the opinion that the proposed recreation and ecological plan for the Foreshore area will be of significant benefit to the community and would improve an existing degraded environment. Additional compensatory measures to benefit the community are therefore not required.

It should be noted that the recreational and ecological plan was developed through workshops that involved both Botany and Randwick Council and the outcomes of the plan also reflect the Councils’ vision for the area. The location of the public footpath and cycleway has been selected in a coordinated way to link in to any future Bay wide trail, as proposed as part of the Botany Bay Program.

The Department requests that the applicant conduct a social impact assessment on the likely impacts on the community.

The new terminal has been estimated to generate about 3,700 full time equivalent jobs in 2024/25. Of this number, a maximum of 400 jobs would be created at the terminal. The remainder comprise transport and other industry related jobs which would not necessarily be based in the Botany area.
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<td>impacts of the extra workforce on the area. The study should consider impacts on accommodation and housing demands, transport requirement and any other community infrastructure services which may be required.</td>
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The population within the Botany LGA is about 36,000 people (based on 2001 data). The 400 jobs on the terminal is about a 1.1% population increase. As this is a very small increase, in an area that is changing rapidly from industrial to residential SPC considers that a Social Impact Assessment for this maximum workforce is not necessary.
DEPARTMENT’S RESPONSES TO QUESTIONS RAISED IN PRIMARY SESSION OF COMMISSION OF INQUIRY

1. DIPNR response to Questions from the Office of the Commissioners of Inquiry for Environment and Planning

1. Options 8 and 10: excavation of eastern end Brotherson Dock

What would be the implications for the effective treatment/mitigation of the contaminated Orica groundwater plumes? Does the contaminated groundwater preclude these options at present and/or in the future? If later excavation at the eastern end of Brotherson Dock has potential to occur what timeframe would be involved? Would impacts on groundwater levels preclude Options 8 and 10 in any case?

The report: “Groundwater Options Analysis for the Proposed Port Botany Expansion” (N. Merrick, July 2004) concluded that some of the alternate options could have serious consequences for local groundwater behaviour. In particular, the study found that the development option which involved excavation of land and associated dewatering would cause significant groundwater table drawdowns of up to 2 metres and a cone of depression potentially extending around 3 km. Land excavation is a component of both Options 8 and 10. The works being undertaken by Orica Australia Pty Ltd to contain the contaminated groundwater can not be treated independently from the timing or nature of any Port expansion. The Orica containment works reached partial capability on 31 October 2004 and are expected to reach full capability by 31 October 2005. Land excavation works could seriously impact on these works.

The exact nature and significance of these impacts is unknown – further and rigorous assessment of the groundwater implications of Options 8 and 10, and subsequent review by DEC and DIPNR, would be required in order to determine this. As appropriate mitigation measures may be able to be undertaken, it is unlikely that the groundwater contamination would altogether preclude Options 8 and 10. However, the Department is unlikely to permit any activities that significantly impact on the groundwater flow regime.

2. Container throughput

Is the container throughput at the Patrick and P&O Ports operations limited by conditions of development consent or other conditions or formal agreements? If so, what is the approved container throughput in TEUs for (a) Patrick terminal; and (b) P&O Ports terminal?

Both terminal operations at Port Botany are the subject of development consents. The Department understands that the P&O terminal operates under the original consent approved by the Planning and Environment Commission on 29 August 1979 (under Section 342 (V) 3 (a) of the Local Government Act 1919 for the establishment of a container terminal). This consent did not include a limit on throughput or refer to terminal capacity.

The Patrick Terminal is the subject of a recent consent, approved by the Minister for Infrastructure and Planning on 27 October 2003. The conditions of consent for the development stipulate (Schedule 3, 1.2) that the applicant shall carry out the development generally in accordance with “the Environmental Impact Statement titled Patrick Port Botany Container Terminal Upgrade, Environmental Impact Statement dated November 2002”. That EIS states “the proposal would provide the Terminal with the ability to handle approximately 1.3 million TEUs per annum by 2016.”

How does the container (TEU) throughput sought by SPC relate to the (approved) throughput at the Patrick and P&O Ports operations?

The Department considers that the approvals described above are not inconsistent with the capacity sought by Sydney Ports Corporation in its EIS.
The Department of Infrastructure, Planning and Natural Resources

The Department notes that, in determining the development application, the Minister would frame the conditions of any approval of the development within the context of the level of impacts assessed in the Applicant’s EIS.

3. Hazards

Do matters raised in Botany Bay City Council’s submission on hazard and risk change the Department’s assessment of the hazards and risks associated with SPC’s proposal (Option 1)?

The Department has reviewed the issues raised by Council and has subsequently obtained further clarifications from the Applicant. While the issues raised by Council are important to consider as part of the technical assessment of impacts associated with the proposal, the specific matters raised by Council do not alter the outcomes of the Department’s consideration of hazards and risk impacts.

An underlying concern presented by Council is the ability to reliably predict future dangerous goods capacities and throughputs for the Port based on historical shipping data for these materials. This concern is particularly important because:

- inaccurate estimates of package sizes would affect the consequence outcomes of the risk assessment (ie the size of potential leaks or spills); and
- inaccurate estimates of total throughput figures would affect the frequency outcomes of the risk assessment (ie more dangerous goods passing through the Port, the greater potential for a leak or spill).

The Department considers that extrapolation of available data is a reasonable means (if not the only means) through which an estimate of future dangerous goods capacities can be established. While there will always be some degree of uncertainty in any extrapolation exercise of this nature, it is important to contextualise the magnitude of this uncertainty and minimise any significant contributor to the uncertainty.

The Department highlights that uncertainty may arise if detailed design results in changes to the assumptions applied through the Preliminary Hazard Analysis (PHA). This may arise from the final design of the Port expansion layout (in the context of the exact location and arrangement of areas associated with dangerous goods) and ultimately through any change in dangerous goods handling into the future. The Department considers that this issue can be adequately and appropriately addressed through preparation of a Final Hazard Analysis (FHA) to reflect the design outcomes for the development immediately prior to commencement of the development. The FHA would utilise the most up-to-date dangerous goods data for the Port, and therefore provide the most accurate risk prediction available at the time. Periodic auditing of the development (say every three years) against the assumptions and outcomes of the FHA would ensure the development remains consistent with predicted impacts, and if not, would identify divergences from FHA assumptions for correction.

The Department highlights that the Preliminary Hazard Analysis prepared and presented by the Applicant (Revision 7) suggests that risk impacts at the nearest residential area to the north of the site are most sensitive to Class 2.3 dangerous goods (and Class 6 to a lesser degree). That is, small changes in the location, quantity or frequency of handling these materials may result in significant changes to predicted off-site risk impacts. The Department considers it important, therefore, that the FHA and periodic auditing against the outcomes of the FHA pay particular attention to Class 2.3 and Class 6 materials, and any changes in management of these goods from that assumed in the PHA. Further, the Department considers that there is merit in the Applicant developing specific management measures to ensure safe handling, storage and tracking of Class 2.3 and Class 6 materials.

In summary, the Department is satisfied that the risk assessment presented by the Applicant to date is reasonable and provides sufficient information to allow an informed decision to be made in relation to hazards and risk impacts. The Department considers that the concerns raised by Council are important matters that could, and should, form the underlying basis for conditions imposed on the development should it be approved by the Minister, as outlined above.
4. Strategic planning

What initiatives have been taken to develop an integrated land use and transport plan for the port, the surrounding local government areas of Botany and Randwick, and other local government areas adjoining Botany? What is the current status of any such plans?

The Metropolitan Strategy Discussion Paper identifies the CBD to Airport Corridor as a key urban renewal corridor. The CBD – Airport Corridor is the area of land between the Sydney CBD, Sydney Airport and Botany Bay.

The Corridor contains the State’s major economic drivers – the Airport, Port Botany and the Sydney CBD. The role of the Corridor as the primary import and export centre for Sydney is set to continue, reinforced by the recent completion of major transport infrastructure projects such as the Airport Rail Link, M5 East extension and the Eastern Distributor. The economic significance of the Corridor is reflected by the fact that it contains 25% of Metropolitan Sydney’s total employment. Employment in the Corridor is forecast to grow by an additional 75,000 jobs by 2021.

Over the past five years, the number of dwellings in the corridor has grown by approximately 20,000, with substantial development at Green Square and in the CBD. Over the next ten years there is a forecast 50% increase in the total dwelling stock. Population in the Corridor is expected to grow by 80,000 by 2021.

The Corridor is the focus of major development interest due to the proximity of the key gateway infrastructure, recent enhancement of the road network (M5 East & Eastern Distributor) and Airport Rail Link. Several proposals (including Green Square Town Centre, the Sydney Airport upgrade, Cooks Cove, Woll Creek and the Redfern-Eveleigh-Darlington area) have the potential to deliver a significant increase in office, industrial and retail floorspace over the next 25 years. However, few of these proposals have clearly identified funding for infrastructure improvements and there is little awareness of how these developments will relate to one another (operating on different timeframes) or what their collective impact would be on traffic volumes generated.

The maintenance of the area’s strategic importance to Sydney’s economy relies on an effective balance between its residential, commercial and industrial interests and the provision of adequate infrastructure for future development. To address this issue, DIPNR has commenced work on a planning framework for the Corridor. The planning framework will cover the whole of the City of Sydney and Botany Bay LGAs and parts of Randwick, Rockdale and Marrickville. The project will aim to strengthen and expand the Corridor’s global economic role through an integrated land use and transport plan to manage growth and urban renewal in the Corridor.

This project is currently investigating the future trends in the demand and supply of commercial, industrial and retail lands in the Corridor, and is examining the key transport and infrastructure issues and pressure points in the corridor. Further detailed assessment of the industrial land in the Corridor required to service the growth of the Port and Port-related activities will be necessary.

2. DIPNR response to Questions from the Botany Bay and Catchment Alliance

1. Could the Department supply BBACA with copies of the completed framework for the NSW Ports Growth Plan and any other associated documents or findings?

The NSW Ports Growth Plan, which was adopted by Government in October 2003, was developed by the Ministry of Transport and Treasury. Information on the Ports Growth Plan is available from the Ministry of Transport website www.transport.nsw.gov.au.

2. Could the Department indicate exactly where the Botany Bay Strategy is today and has it been reduced further from the draft Towards a Botany Bay Strategy?

As indicated in the Department’s primary submission, a discussion paper Towards a strategy for Botany Bay was exhibited between May and August 2004. The Department is currently assessing the submissions received during the exhibition period. Once completed, the Department will make recommendations to Government on a strategy to guide the planning and management framework in and around Botany Bay.
3. Could the Department supply the latest information on the Sydney Metro Strategy with special attention to where it relates to the Botany Bay Strategy, the Healthy Rivers Commission findings on Botany Bay, the State Riverine Corridor Policy and the Sydney Metro Catchment Management Committee?

Information on the progress of the Metropolitan Strategy provided in the Department’s primary submission is the most recent information available. It is expected that the Metropolitan Strategy will be released in early 2005.

4. Has the Department taken into consideration the NSW Government’s Statement of Intent November 2002 re Healthy Rivers Commission (Botany Bay)?

As indicated in the Department’s primary submission, the Department has a number of concerns in relation to the potential regional effects of the proposal that will need addressing at the local and regional scale through:

- Facilitation of an effective balance between the conflicting residential, commercial, industrial and other employment land use pressures in the area (including the CBD to Airport corridor);
- Identification of the cumulative effect of major proposals in the Botany Bay area on transport infrastructure and identification of funding for future infrastructure improvements; and
- Long-term management of the significant environmental and social values of Botany Bay including any local and regional impacts resulting from the proposed Port Botany expansion that may be realised over a variety of timescales.

All relevant policies and strategies, including the Statement of Intent, are taken into account by the Department when it makes its final recommendations on the proposal.

5. Does DIPNR still consider that the NSW Ports Growth Plan to be the controlling document to whether this proposal is approved or not? (As announced at the Legislative Council’s Standing Committee on State Development Inquiry into Port Infrastructure in NSW?)

Consistent with the NSW Ports Growth Plan, the Department, as indicated in its primary submission, acknowledges both the strategic economic significance of Port Botany and the central role it plays – and will continue to play – in the ports system in NSW. At the same time, the Department has clearly indicated that the proposal must be consistent with, and integrated into, key planning strategies that are being developed; that all environmental effects associated with the proposal must be adequately addressed; and that the proposal must be the most suitable option for meeting the forecast container trade growth.

6. Has DIPNR taken into consideration other major developments around the bay when looking at the cumulative impacts on the catchment, for example, Sydney’s emerging industrial hot spot Kurnell, the Cooks Cove development and other residential development at North Arncliffe, the Sharks development and other residential development on the shores? Could you please supply BBACA with documentation of this occurring?

As indicated in the Department’s primary submission, the Department is involved in a number of initiatives to address the cumulative impacts of all major development activity on the existing road and rail networks. In particular the Department is involved in the preparation of a Metropolitan Strategy and investigations into the development of a Metropolitan Intermodal Freight Strategy. The Department considers that these initiatives will ensure that appropriate integrated infrastructure, particularly with regard to transport and inter-modal facilities, is in place to facilitate the forecast container throughput at Port Botany up to 2025.

7. Has DIPNR called for a task force to be established for the Port Botany expansion as per that for White Bay, Sydney Harbour and if not why not?

The task force for White Bay is looking at the future use of the area consistent with the Government’s commitment to retaining White Bay for maritime purposes. The task force has undertaken consultation with industry and community stakeholders. For Port Botany, the participation of community groups, industry and individuals – as well as State and Commonwealth agencies and local government – is provided through the environmental assessment process, including the Commission of Inquiry.

8. Has DIPNR asked for the additional road capacity needed and named in the supplementary EIS to be part of the economic and social costs of the port expansion and if not, why not?
The Department’s assessment is considering the economic and social costs of the proposal, including the costs related to infrastructure provision and use.

9. Has DIPNR copies of and could they supply BACCA with the extensive economic, scientific and social studies of alternative sites such as Newcastle and Port Kembla and all other Greenfield sites named in the EIS?
An applicant, in considering alternative sites as part of the requirements for an EIS, is not obliged to undertake an environmental impact assessment of those sites equivalent to the assessment undertaken for its preferred proposal. The Department considers that the EIS’s review of alternative sites outside Botany Bay fulfilled the requirements of the EIS.

10. Has DIPNR considered the alternative Globe Star Shipping proposal?
No.

11. Does DIPNR consider the Port Enfield proposal as part of this development proposal?
The Port Enfield proposal is not the subject of the development application.

12. Could Mr Chris Wilson, Director, Major Development Assessment, elaborate on the moratorium mentioned in the correspondence to me on the 4 March 2003, when addressing the Patrick’s upgrade at Port Botany?
The moratorium referred to in the Department’s correspondence of 4 March 2003 was announced by the then Minister for Urban Affairs and Planning. The Department understands that the moratorium no longer applies.

13. Has DIPNR the findings or considered the National Standard on Safety for Major Facilities inclusive of emergency response procedures, buffer zones and risk analysis for the proposed expansion of Port Botany, as per Victoria and Queensland?
Under the NSW State emergency management arrangements there already exist extensive coordinated emergency plans for Port Botany. WorkCover NSW is the lead agency for the Control of Major Hazard Facilities in New South Wales, and is currently preparing to implementation provisions of the National Standard. It is noted that a comprehensive risk assessment had been undertaken for Port Botany.

14. Has DIPNR considered the Sydney Airport Master Plan as 30 per cent of Sydney’s Cargo goes through Kingsford Smith Airport?
As indicated in the Department’s primary submission, in particular in section 4, the significance of the airport, its impact on the region, and its future growth and expansion is being taken into account in strategic planning for the metropolitan region.

15. Has DIPNR considered the NSW Cabinet Decision No 206 5 November 2001 regarding the expansion proposal?
Refer question 4.

16. Does DIPNR consider the Orica toxic plumes as an important factor with the 7.4 million cubic metres of sand needed to be dredged from the floor of Botany Bay for this proposal?
As indicated its primary submission, the Department considers that the impact of the proposed Port Botany Expansion on the groundwater system of the sand bed aquifer may not pose any significant risk to the resource. Notwithstanding that, a comprehensive monitoring program should be established during construction and operation to confirm the predictions of minimal impact. The monitoring program should cover groundwater quantity, quality and, if present, dependent ecosystems. Contingency measures should be designed to address any anomalous impacts of greater magnitude than those predicted.

In addition the issue of the ongoing investigation and remediation of groundwater at Penrhn Estuary and Foreshore Beach is being progressed through a separate process between DIPNR, DEC and Orica.

17. Does DIPNR consider that the additional information in at least one of the four supplementary volumes of the EIS to be an admission that the original 10 volumes was inadequate?
No.
18. Does DIPNR consider all relevant information supplied in the 7500 page EIS to be adequate for this expansion proposal to be approved or has it been shown to have many flaws? This is part of the assessment process currently underway.

3. DIPNR responses to Questions from No Port Enfield

Rail noise
1. Does DIPNR consider the noise assessment contained in the EIS to be sufficient:
   - In terms of the area assessed;
   - In terms of the methodology;
   - In terms of potential future noise impacts on residential and other receivers along the entire freight rail corridor;
   and in what ways does DIPNR consider the EIS to be sufficient / deficient in relation to rail noise?

As indicated in its primary submission (section 7.2), the Department considers that while many of the noise impacts associated with the construction stage of the proposal can be generally managed through the implementation of appropriate mitigation and management measures, additional information is still required before the Department finalises its assessment. In its submission the Department has highlighted a number of additional information requirements regarding rail noise impacts associated with the operation of the proposal. The Department will finalise its assessment once the additional information is received and include the outcomes of its assessment in its submission in reply to the Commission of Inquiry.

2. Does DIPNR consider that additional noise impacts will occur on the Botany line after duplication, and if so what will those impacts be? In your view has the EIS adequately addressed this issue?

As indicated in its submission (section 7.2), the Department supports DEC’s view that the assessment of the impacts of rail noise on sensitive receivers on the Botany Yard to Cooks River section of the freight rail line needs further strengthening and this should be addressed by the proponent and/or Railcorp. The Department understands that Railcorp is committed to working with the Applicant with scoping of any further noise assessment to enable Sydney Ports to work through these issues with DEC. The Department considers that the Applicant should be required to identify appropriate noise mitigation measures to the satisfaction of DEC.

4. In addition to Port Botany freight traffic on the rail line, there are cumulative impacts from other freight, including coal, hauled on the line. Does DIPNR consider the EIS has adequately addressed the cumulative noise impacts along the freight rail corridor?

In its primary submission (section 7.2), the Department requested a review of the rail noise assessment. The submission noted that “the assessment relied upon a noise assessment (conducted by Railcorp for the purpose of a REF for duplication of the rail line) that may need review in terms of noise criteria it used. The EIS does not identify impacts associated with increased rail traffic movements in the absence of the duplication.” (p 68)

Rail Emissions and Air Quality Impacts
12. This proposed physical expansion of Port Botany is a part of Sydney Ports Corporation (SPC) strategy to handle increased container throughput. Their strategy involves an objective of transporting 40% or more of containers by freight rail (a 220% increase in rail traffic) accompanied by increases in road traffic in order to handle a trebling (at least) in container growth. Does DIPNR believe that a 40% modal shift to freight rail coupled with an approximate 100% increase in road traffic (heavy vehicles) numbers operating to and from the Port, will actually achieve air quality improvements, and if so can you detail your justification for this?

The NSW Government supports an increase in the rail mode share. The Department’s primary submission (section 7.11) indicates that it requires the Applicant to address information gaps outlined by NSW Health including in relation to road traffic air emissions (pp. 126-128).

Rail Capacity
24. The Rail Infrastructure Corporation has stated that the maximum capacity of the dedicated duplicated Botany - Enfield freight line will be about 1.2 Mill to 1.3 Mill TEU’s per annum. When
formulating the upcoming Metropolitan Freight Strategy has DIPNR used a finite capacity figure and if so what is that figure? If a finite capacity figure has not been used on what basis has the need for rail network / intermodal terminal capacity been assessed?

The issues raised in this question will be addressed as part of the Metropolitan Intermodal Freight Strategy, when released by the NSW government.

33. The capacity of the freight rail network to cope with the proposed modal shift to rail is obviously dependent on there being sufficient intermodal capacity within Sydney to be able to handle truck/train transfers. Can you detail how / when / where this capacity will be provided in line with the documents: "The Intermodal Freight Terminal Study " (RIC - 2003);"Long Term Strategic Plan for Rail" (DIPNR - 2003);"Shaping Western Sydney" (Planning NSW -1998);"Port Enfield Terminal Report released" (Media Release The Hon Carl Scully Minister for Transport 19 February 2003);"A New Freight Hub for Sydney" (Joint Media Release Deputy Prime Minister John Anderson Minister for Defence Senator Robert Hill 15 September 2004); or other NSW Government strategies, released and/ or upcoming?

DIPNR has considered a range of options for meeting intermodal terminal capacity requirements for growth in metropolitan intermodal freight under a number of rail mode share scenarios. These considerations will be addressed in the Metropolitan Intermodal Freight Strategy, when released by the NSW government.

Questions referred to relevant authorities

- Answers to questions 3, 5 - 11, 21, 26, 27 and 40 will be provided direct by the Department of Environment and Conservation and RailCorp.
- Answers to questions 13, 15, 20, 22 and 37 will be provided direct by the Department of Environment and Conservation.
- Answers to questions 17 - 19, 23, 25, 28 - 32, 34 - 36, 38 and 39 will be provided direct by RailCorp.
- Answers to questions 14 and 16 will be provided direct by the Applicant.

4. DIPNR response to questions from Kurnell Regional Environment Planning Council

With DIPNR’s Sydney Metropolitan Strategy and its Strategy for Botany Bay at advanced stages of preparation, will the Department make both documents available to participants in the Inquiry before conclusion of the Inquiry since they will obviously provide the context that will be indispensable to informed decision-making on the impacts of Port Botany’s expansion?

The Department acknowledges the importance to the Inquiry’s deliberations of the proposal’s strategic context, and will ensure that the Commission is kept updated on the status of each strategy.

When the Department has completed its work on the strategies, it will submit recommendations to Government for its consideration and decision.

5. DIPNR response to questions from South Sydney Regional Organisation of Councils

1. At the macro/master planning level, what intermodal, rail and container handling infrastructure is required in order to ensure the provision of continuous and sufficient logistics chain linkages for Port Botany to achieve its proposed container handling throughputs utilising rail transport? Specifically:

- Where will the intermodal terminals be located?
- How much new infrastructure will be needed and how much relies on existing rail networks?
- Are use conflicts of existing infrastructure likely to occur? If so, how will this influence optimal performance?
- Given the status of the Government’s transport master planning, what is the Department’s opinion of when it will be likely that the entire chain of these investments will be operating?
The information requested is part of the Intermodal Freight Strategy which will be released by Government in due course.

2. What is the Government’s master planning policy for priority of mode use of the Orbital Motorway? Will freight movements have access priority? Will disincentives be applied to light vehicles, or will open access remain? What is the Government’s master planning policy for priority of mode use of the M5? Will freight movements have access priority? Will disincentives be applied to light vehicles, or will open access remain?

RTA has primary policy responsibility for the State road network. However, the Department understands that detailed investigations and planning for the Orbital Motorway are ongoing. The orbital route around Sydney is planned to offer an efficient route for commercial vehicles and trucks between the city’s growing industrial areas, Port Botany, Sydney Airport and beyond. The orbital aims to take heavy traffic off congested local roads creating the opportunity to improve public transport through priority bus lanes, making bus services more reliable.

In relation to the freight movements on the M5, advice DIPNR has received from the RTA indicates that

“while the RTA would consider priority for freight movement (including the provision of truck only lanes) on the State road network, the level of priority is based on minimising the impact on non-freight traffic, including other business traffic.

The existing State road network in the vicinity of Port Botany experiences high levels of congestion at peak traffic periods. This situation will worsen with any additional vehicle movements associated with the future expansion of Port Botany, Sydney Airport and adjacent industrial/commercial and residential areas such as Green Square. The provision of truck only lanes on the State road network with the existing road capacity and future traffic demands will exacerbate an already poor situation and could not be accepted by the RTA or the community.

Truck only lanes could only be considered on the State roads in the vicinity of Port Botany with significant road capacity enhancements on a network-wide basis and only if it can be shown that there will be no worsening of the overall traffic conditions.”

3. What is the Government’s master planning policy on the hours of operation of freight haulage, receipt and dispatch at businesses across the metropolitan region? Will out of hours services be encouraged, discouraged or unencumbered?

Given the wide variation in operating requirements, conditions and constraints of particular developments in the chain of freight transport and delivery, it is not feasible to apply an overall policy to hours of operation. The Government has therefore not adopted a master planning policy on hours of operation for freight haulage, receipt and dispatch, but will assess these as part of the overall environmental impact assessment of a development proposal.

4. Given the traffic generating developments in the region around Sydney Airport, and the constrained road network in the area, what will be the traffic environment on the region’s state roads at salient time intervals over the next two decades? Adopting these traffic scenarios, and government freight policy, what will be the likely impact on heavy road transport economics?

What will be the impact on the road network in the Sydney metropolitan area of congestions, emissions, amenity, noise? What is proposed to mitigate these impacts?

The information requested is part of the Intermodal Freight Strategy which will be released by Government in due course. When the Department is in a position to provide such information, the Commission of Inquiry will be advised without delay.

5. In the context of expanded Port Botany activities, has the risk of failure to provide adequate additional rail infrastructure (eg. rail line, intermodal terminals) necessary to achieve a 40% rail mode...
share, been taken into account? In light of the apparent strong community and local government opposition to the construction of such facilities in their area. Are there any contingency plans for using road transport for freight generated at the Port Botany facilities in the advent that the predicted rail mode share is not achieved? If so what are they? Has the potential impact of increased truck traffic along extended sections of the M5 arising from increased port activities at Botany Bay been taken into account in the provision of current road transport infrastructure and planning for future transport infrastructure?

Given that port generated truck traffic may considerably reduce the overall capacity of the M5 motorway along much of its length, what considerations, if any, have been given to the possible economic and social impacts of the M5 reaching capacity and traffic using alternative routes? What are the most likely mitigation measures that will be implemented to minimise these impacts?

The information requested is part of the Intermodal Freight Strategy which will be released by Government in due course. When the Department is in a position to provide such information, the Commission of Inquiry will be advised without delay.

The Department also notes that the EIS addressed the possibility of the 40% rail mode share not being achieved.

In relation to road transport and traffic, DIPNR understands that these questions are being responded to directly by the appropriate agency, in this case the RTA.

6. DIPNR response to questions from Australian International Research Institute

I ask you to consider whether you would agree to support a proposal that a search of patents’ applications is performed at the Australian Patents Office so as to trace the research and development trends in telecommunication and airspace (radar) control. This would facilitate making an assumption to what extent the increased volume of a stevedore to trucks communications might interfere with the adjacent airport safety system, in the years to come and particularly in poor weather.

The Department advises that it would be more appropriate for you to direct your question to the Sydney Ports Corporation. Please note that both the Commission of Inquiry and the Department have requested that Sydney Ports Corporation consult directly with Airservices Australia regarding matters dealing with the operations of Sydney Airport.