PROPOSED
PORT BOTANY EXPANSION

Final Consultation Report

MAY 2003

MANIDIS ROBERTS
environment + community

Proposed Port Botany Expansion

Final Consultation Report

QUALITY CONTROL

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1 Introduction

1.1 BACKGROUND

Sydney Ports Corporation (Sydney Ports) proposes to expand port facilities at Port Botany. An environmental impact statement (EIS) is being prepared for the proposed Port Botany Expansion. As part of the environmental impact assessment, Sydney Ports has been consulting with community, government and industry stakeholders. This report describes these consultations.

Following the formal announcement by Government of the proposal, consultation with stakeholders occurred during the period of 23 November 2001 to 20 May 2003. Consultation would continue through the planning, construction and operation of the proposed terminal should approval be granted.

The requirements issued by the Director-General of PlanningNSW specify that consultation must be undertaken during EIS preparation. Consultation is required with relevant local, State, and Commonwealth government authorities, service providers and community groups. The Director-General's requirements also specified that the EIS must address any issues raised by these groups during consultation. The three groups of stakeholders that Sydney Ports has consulted with during preparation of the EIS (government, industry and community) reflect the Director-General's requirements. Within each of these groups a broad range of stakeholders was consulted. Issues raised by stakeholders were continuously fed back to the EIS team and were addressed in the EIS.

1.2 AIMS OF THIS REPORT

The aims of this report are to:

- Describe the communications strategy.
- Report on the consultation activities undertaken.
- Report on the feedback received from consultation activities.

This report does not record the response by Sydney Ports to issues raised by stakeholders through the consultation process, as stakeholder issues will be addressed throughout the EIS.

The report also outlines consultation activities to take place during the EIS exhibition phase.

URS Australia Pty Ltd (URS) was commissioned by Sydney Ports to prepare the EIS for the proposal. Manidis Roberts are assisting with the consultation activities associated with the EIS and were responsible for preparing this report.

1.3 STRUCTURE OF THIS REPORT

Section 2 describes consultation activities undertaken during the EIS preparation phase.

Section 3 describes the participation in consultation activities during the EIS preparation phase, and the feedback received from these activities.

Section 4 describes consultation activities proposed during the EIS exhibition phase.

The methods used to identify stakeholders and issues are described throughout sections 2 and 3, in relation to the various activities undertaken.

1.4 COMMUNICATIONS STRATEGY

Sydney Ports initiated consultation following the announcement of the proposal by the NSW Minister for Transport in November 2001. Sydney Ports, with URS and Manidis Roberts, developed a communications strategy.

The objectives of the communications strategy are:

- To provide clear, concise and easily understandable information about the proposed expansion, including the need for the project and its benefits, associated issues and the EIS process.
- To provide a clear and accessible process for stakeholders to provide input into, and receive feedback on the preparation of the EIS.
- To involve the community so that concerns can be understood and taken account of in the development of the proposal.
- To ensure that the statutory requirements for consultation in an EIS process and the PlanningNSW Director General requirements regarding consultation are met.
- To ensure stakeholders are kept up to date on the progress of the preparation of the EIS.
- To ensure that issues raised by community, government and industry stakeholders are addressed during the preparation of the EIS.
- To maintain existing relationships with key community members, the broader community and government and industry stakeholders.
- To develop relationships with community members and stakeholders who have not been involved in Sydney Ports community consultation activities prior to the commencement of the EIS preparation.
- To promote an understanding of the project's features in relation to areas of stakeholder concern.

1.5 STAKEHOLDERS

Following consultation with local councils and the Healthy Rivers Commission, stakeholders for the EIS consultation program were identified taking into account the proposed location, surrounding land and water body uses, existing Sydney Ports stakeholder relationships, community structures and organisations in the local and regional vicinity, and the interests of local and state government bodies.

The project stakeholders which were identified include:

Government:

- State and Federal Government agencies and departments with interests in the project, including those with statutory and regulatory authority.
- Officers and elected representatives of local councils in the Botany Bay region, and the Southern Sydney Regional Organisation of Councils.

Industry:

- Port tenants.
- Service providers.
- Cargo owners.
- Industry associations.

Community

- Environmental and local interest groups.
- Residents and businesses of the local Port Botany community, Randwick and Botany Bay LGAs, and the greater Botany Bay region.
- Recreational users of Foreshore Beach, Penrhyn Estuary, and Botany Bay.

The consultation program was designed to provide information to, and facilitate input from, all stakeholders.

2 EIS preparation phase consultation activities

This chapter outlines the consultation activities which were undertaken during the EIS preparation phase. The majority of activities were designed to provide stakeholders with information about the proposal and to receive feedback from stakeholders. The focus group sessions also informed the social impact assessment for the EIS, and the public open space plan workshops were designed to provide input into requirements and concept for of the public open space plan.

2.1 PLANNING FOCUS MEETINGS

To assist in preparing the Director-General's requirements for the EIS, PlanningNSW held a Planning Focus Meeting for local and state government stakeholders on 18 December 2001.

As requested by the local community and supported by Sydney Ports, PlanningNSW held an additional Planning Focus Meeting for community representatives on 5 February 2002.

Issues raised by the attendees at both meetings were addressed by the Director-General in formulating the Director-General's requirements. The Director-General's requirements were received by Sydney Ports on 9 April 2002.

2.2 FOCUS GROUPS

Two rounds of focus groups sessions were held during the EIS preparation phase. Each session catered for stakeholders representing specific interest groups.

The first round of focus groups was held in the early stage of the EIS preparation phase. The purpose of these sessions was to identify and understand:

- The community structure and values potentially impacted by the proposal.
- Community views and issues regarding the proposal.
- Opportunities arising from the proposal.
- Mitigative measures to be considered for the development of the proposal.

The second round of focus groups was held towards the end of the EIS preparation phase, when the proposal had been further developed and potential impacts and mitigative measures had been identified.

The purpose of these sessions was to:

- Present stakeholder representatives with further information about the proposal, the public open space plan, the identified social impacts and associated mitigative measures and enhancement opportunities.
- Receive feedback from stakeholders on the proposal, the public open space plan, the identified social impacts and associated mitigative measures and enhancement opportunities.

Details of these sessions are contained in Table 1.

Table 1: Focus group sessions

Target audience	Date	Number of invitees	Number of attendees
First round			
Environmental	30 April 2002	25	5
Local community	1 May 2002	19	14
Fishing and boating community	2 May 2002	18	7
Foreshore Beach users	7 May 2002	13	7
Second round			
Foreshore Beach users	28 April 2003	12	5
Fishing and boating community	30 April 2003	19	6
Local community/environment	1 May 2003	22	13

The feedback received from the community in these sessions has been used when identifying the key issues raised during the consultation process (see section 3.2), and provided input into the social impact assessment and the development of the proposal.

Summary notes from each session were forwarded to attendees, and are contained in Appendix A.

2.3 NEWSLETTERS

Four newsletters were produced by Sydney Ports during the EIS preparation phase. Newsletters contained information about the proposal, the EIS process, progress, on specialist studies commissioned, consultation and specialist study outcomes, and details of the public response mechanisms.

Newsletters were issued in February 2002, June 2002, October 2002 and April 2003. Copies of the newsletters are attached in Appendix B.

Newsletters were letterboxed to homes and businesses in the area surrounding Port Botany.

Newsletter 1 - Approximately 13,000 copies of Newsletter 1 were letterboxed to the following suburbs: Banksmeadow, Botany, Port Botany, La Perouse, Matraville, Phillip Bay, and Mascot.

Newsletter 2 - Approximately 18,000 distributed. 15,000 copies of Newsletter 2 were letterboxed to the following suburbs: Banksmeadow, Botany, Port Botany, La Perouse, Matraville, Phillip Bay, Mascot, Kurnell, Kyeemagh and Taren Point. Approximately 3,000 copies were distributed to local council chambers, council libraries and the Marrickville Metro Shopping Centre.

In August 2002, 600 copies of both newsletter 1 and 2 were distributed to Pagewood, following a request from the City of Botany Bay Council.

Newsletter 3 - Approximately 19,000 distributed. 16,000 copies of Newsletter 3 were letterboxed to the following suburbs: Banksmeadow, Botany, Port Botany, La Perouse, Matraville, Phillip Bay, Mascot, Kurnell, Kyeemagh, Taren Point and Pagewood. Approximately 3,000 copies were distributed to local council chambers, council libraries and the Marrickville Metro Shopping Centre. Two hundred and ten copies were posted or emailed to all contacts on the community database at the time. A feedback form was attached to Newsletter 3 (see section 2.8).

Newsletter 4 - Approximately 19,000 distributed. Newsletter 4 was distributed in the same manner as Newsletter 3.

Downloadable PDF copies of the newsletters were available on the Sydney Ports website or provided upon request.

2.4 PUBLIC OPEN SPACE PLAN WORKSHOPS

Sydney Ports held two planning workshops to generate and assess options for the areas of public open space potentially affected by the proposed expansion.

The approach was to work with local council and state government agency stakeholders in workshop situations to generate and evaluate alternatives. Stakeholders were invited to attend the workshops to represent the interest of the local community. Stakeholder organisations which participated in the workshops included:

- City of Botany Bay and Randwick City councils.
- Southern Sydney Regional Organisation of Councils.
- Waterways Authority.
- Environment Protection Authority.

- National Parks and Wildlife Service.
- Sydney Airport Corporation.
- Environment Australia.
- NSW Fisheries.
- Sydney Ports.

Feedback received from the community in other consultation activities was also fed into the workshops.

An interdisciplinary team of Sydney Ports' internal specialists and external specialists commissioned by Sydney Ports also participated in the workshops. Specialisations included urban design, landscape architecture, visual impact assessment, social impact assessment, environmental management, and engineering.

A bus tour of the study area was arranged for participants on 12 September 2002 prior to the first workshop.

The first half-day workshop was held on 12 September 2002. The objectives of the workshop were to:

- Present and explain the current concept layout for the proposed port expansion.
- Develop a long-term desirable future (20-30 years) for the public open space areas.
- Identify the desired outcomes to meet the long-term desirable future for the public open space areas. Desired outcomes are shorter term goals (5-10 years) to achieve the longer term desirable future (20-30 years). For example, a long term desirable future may be a vibrant public space and a desired outcome may be secure pedestrian access across Foreshore Road.
- Identify practical ideas for the public open space areas.

The interdisciplinary team of Sydney Ports internal specialists and external specialists used the material developed at the first workshop to prepare for the second workshop.

The second half-day workshop was held on 17 October 2002. The objectives of the workshop were to:

- Present the options developed from the outputs of the first workshop.
- Confirm that the options presented were the options that needed to be evaluated.
- Evaluate the options, using a planning balance sheet and keeping in mind community feedback obtained through other consultation activities.
- Agree on the evaluation of options as a group.
- Identify shortlisted options.

Following the second workshop, the findings of the work were documented and Sydney Ports' interdisciplinary team tested the feasibility of the options.

Sydney Ports assessed the shortlisted options based on community feedback, and selected a preferred option with the following emphasis in each precinct:

- A nature emphasis for the Penrhyn Estuary with minimal access by people and no dogs. The focus would be on the conservation of the wading birds and enhancement of seagrass habitat.
- A nature emphasis for the Foreshore Beach precinct, maintaining the current environment and activities as much as possible. This would include some recreation activities, including a new boat ramp and enhanced public open space.

More details about the proposed public open space and the development process of the design are contained the Public Open Space chapter of the EIS.

2.5 STAKEHOLDER BRIEFINGS AND PRESENTATION

2.5.1 Stakeholder briefings

Sydney Ports met with a number of government, community and industry stakeholder representatives to brief them on the project progress and process and seek feedback about the proposal. Briefings were specifically tailored to the interests of the stakeholders involved. Details of these briefings are contained in Table 2.

Table 2: Stakeholder briefings

Stakeholder	Date	Format
Industry	21/3/02	Information evening
Community	25/3/02	Information evening
Community	4/4/02	Information evening
Botany Bay Council	8/8/02	Stakeholder briefing
Randwick Council	21/8/02	Stakeholder briefing
Rockdale Council	29/8/02	Stakeholder briefing
Marrickville Council	3/9/02	Stakeholder briefing
Sutherland Council	4/9/02	Stakeholder briefing
Kogarah Council	5/9/02	Stakeholder briefing
Environment Protection Authority	18/9/02	Stakeholder briefing
Sutherland Shire Environment Centre	17/9/02	Stakeholder briefing
Southern Sydney Regional Organisation of Councils	10/9/02	Stakeholder briefing

Stakeholder	Date	Format
Sutherland Shire Tourism Association	3/9/02	Stakeholder briefing
Community & environment groups	6/5/03	Group stakeholder briefing
Local government	7/5/03	Group stakeholder briefing
Industry and tenants	8/5/03	Group stakeholder briefing

Stakeholders were briefed about the proposal, and were invited to provide comments or raise issues related to the proposal. Minutes from the briefings are contained in Appendix C.

2.5.2 Presentations

Sydney Ports presented the proposal to a large number of community, government and industry stakeholders during the EIS preparation phase. These presentations took place in both formal and informal settings. The content of the presentations varied, but generally covered the need for the proposal, what would be involved in the port expansion, the EIS process and provided the opportunity for feedback from stakeholders.

Presentations were given to the following groups:

- ANL Container Line
- APL Container Line
- Bizwatch (Port Botany Business Group)
- Botany Bay Coastal Management Committee (BBCMC)
- Botany Environment Watch
- Brighton Le-sands Amateur Fishermans Association
- China Shipping Container Lines (CSCL)
- Columbus Line
- China Ocean Shipping Co (Cosco)
- Fesco Australia Line
- 'K' Line
- La Perouse Precinct Committee
- Lawson and Trealor
- Lloyds List Ausintermodal Conference
- Mediterranean Shipping Co.
- Malaysian International Shipping Corporation Berhad (MISC)
- Member for Heffron
- Mitsui OSK Lines (MOL)
- NYK Line
- Orient Overseas Container Line (OOCL)
- P&O Management Briefing
- P&O Nedlloyd
- Pacific International Line (PIL)

- Port Botany Neighbourhood Consultative Group (PBNCG)
- Randwick City Council (Mayor)
- Randwick City Council (Staff)
- Randwick Rotary
- RCA and transport industry
- Regional Container Lines
- Road Freight Advisory Committee
- Rotary - Drummoyne
- Roads and Traffic Authority site tour
- Sydney Airport Corporation Ltd
- Save Botany Beach
- Shadow Minister Briefings
- Shipping Australia
- South Sydney Amateur Fishing Association
- Southern Sydney Regional Organisation of Councils
- State Chamber of Commerce (NSW)
- Stevedores
- Transport Coordination Committee NSW
- Tenants briefing
- TransNZ Conference
- Transport NSW briefings
- Waterways
- Zim Line

2.6 ADVERTORIALS

Updates on the proposal were included in the regular Sydney Ports advertorial in the Southern Courier and the St George & Sutherland Shire Leader for the months of June/July, August, September, October and November/December 2002 and February, March, April and May 2003. Advertorials contained information about the proposal, progress to date, and details of the public response mechanisms.

Copies of the advertorials are contained in Appendix D.

2.7 OTHER GOVERNMENT CONSULTATION

Parallel to the consultation program described in this report, a series of PlanningNSW and State and Federal government briefings were undertaken. Government agencies were kept updated throughout the EIS preparation phase.

Details of these activities are included in the Government Consultation chapter of the EIS.

2.8 PUBLIC RESPONSE MECHANISMS

A variety of public response mechanisms were operational throughout the EIS preparation phase: November 2001 to May 2003. The details of these mechanisms were publicised on Sydney Ports' website, in newsletters, during briefings and presentations, and in local newspaper advertorials. The community was invited to utilise the public response mechanisms to make comments or ask for further information about the proposal.

All items of correspondence were logged in a community database. The database recorded respondents' contact details, the date and method of contact, issues raised, and what information had been provided to the respondent. The details of all respondents remain confidential.

A summary of issues raised via public response mechanisms from November 2001 to May 2003 is contained in Section 3.2.

2.8.1 Telephone information line

A freecall telephone information line was established to provide the opportunity for the community to call and discuss the proposal with a member of the project team. An answering machine was activated after hours or when the line was unattended.

Ninety five calls were received during the EIS preparation phase.

2.8.2 Reply paid address

A reply paid address was established to allow members of the community to make comments or inquiries in relation to the proposal via post.

Nine written submissions were received during the EIS preparation phase.

2.8.3 Fax number

A fax number was publicised to allow members of the community to make comments or inquiries in relation to the proposal via fax. Inquires received by Sydney Ports were forwarded to Manidis Roberts.

Two fax submissions were received during the EIS preparation phase.

2.8.4 Email address

A dedicated email address was established to allow members of the community to make submissions or inquiries in relation to the proposal via email. Inquires received by Sydney Ports were forwarded to Manidis Roberts.

Sixty email submissions were received during the EIS preparation phase.

2.8.5 Newsletter 3 feedback form

A feedback form was attached to Newsletter 3. The purpose of the feedback form was to allow members of the community to make comments on the new proposed concept layout which was discussed in the newsletter, in particular relating to the recreation and water management/ecological areas.

One hundred and thirteen feedback forms were received. The majority of respondents used the feedback forms to provide general comments on the proposal.

2.9 SYDNEY PORTS WEBSITE

Throughout the EIS preparation phase, the Sydney Ports website provided details of the proposal, including electronic copies of newsletters, media releases, images, and the First Port Future Port brochure. The website also provided details of the public response mechanisms.

3 EIS preparation phase consultation activities feedback

This chapter provide details of the levels and forms of stakeholder participation in consultation activities during the EIS preparation phase, and describes issues raised through these activities.

3.1 PARTICIPATION IN CONSULTATION ACTIVITIES

The consultation activities described in section 2 were designed to inform the community and key stakeholder representatives about the proposal, and to provide a range of opportunities for community and stakeholder input into the EIS. Table 3 describes the variety of involvement in the different consultation activities.

Table 3: Involvement in consultation activities

Activity		Involvement	Date
Planning focus meeting – government		30 attendees	18 December 2001
Planning Focus Meeting – community		5 attendees	5 February 2002
Focus Group sessions	Environment	5 attendees	30 April 2002
	Local Community	14 attendees	1 May 2002
	Fishing and boating community	7 attendees	2 May 2002
	Foreshore Beach users	7 attendees	7 May 2002
	Foreshore Beach users	5 attendees	28 April 2003
	Fishing and boating community	6 attendees	30 April 2003
	Local Community	12 attendees	1 May 2003

Activity		Involvement	Date
Stakeholder briefings and presentations	Information evenings	3 briefings	March – April 2002
	Individual stakeholder briefings	10 briefings	August – September 2002
	Group stakeholder briefings	3 briefings	May 2003
	Presentations	46 presentations	November 2001 - May 2003
Public response mechanisms	Telephone information line	95 calls	November 2001 - May 2003
	Reply paid	9 written submissions	November 2001 - May 2003
	Fax	2 faxes	November 2001 - May 2003
	Email	60 emails	November 2001 - May 2003
	Newsletter 3 feedback form	113 forms received	October 2002 - May 2002
Newsletters	Newsletter 1	Approximately 13,600 distributed	February 2002
	Newsletter 2	Approximately 18,600 distributed	June 2002
	Newsletter 3	Approximately 19,000 distributed	October 2002
	Newsletter 4	Approximately 19,000 distributed	April 2003
Public open space plan workshops	Workshop 1	18 attendees	12 September 2002
	Workshop 2	10 attendees	17 October 2002
Advertorials		9 advertorials	June 2002 – May 2003

3.2 ISSUES RAISED IN CONSULTATION WITH COMMUNITY STAKEHOLDERS

The consultation activities, which engaged community members and groups, enabled the identification and collation of a large range of issues for consideration during EIS preparation. Some of these issues were outside the scope of the EIS. There were, however, a number of frequently raised issues which are addressed in the EIS. A summary of these issues and some related comments are listed in Table 4.

Table 4: Issues frequently raised by the community

Issue	Comments
Alternative sites for a new container handing facility	There was support for the consideration of an alternative site for a new container handing facility. Suggested locations included Port Kembla, Newcastle, Sydney Harbour and other locations within Botany Bay. Comments suggesting Port Kembla and Newcastle as locations emphasised that these localities would welcome the development eg to create jobs.
Impact on recreational use of Foreshore Beach	Comments relating to Foreshore Beach were primarily concerned that part or all of the beach would be lost through the proposed expansion. The various uses of Foreshore Beach were emphasised, as was the value that it has to the local community. A number of suggestions were made for improvements to the area, eg safety measures, access across Foreshore Road and establishment of pathways. Adequate maintenance of the public open space areas was also raised by community representatives.
Cumulative impacts	There was concern about the cumulative impact of the various industrial ventures around Botany Bay. People commented that they felt that the Bay could not sustain any further development and that the cumulative impact needs to be addressed by the State Government.
Traffic impacts on local roads	The increased cargo handling capacity of an expanded port raised concerns amongst local residents about the potential of an increase in trucks on local roads. Despite the increased modal share of cargo travelling by rail, the issue of more trucks using Botany Road and other local roads was a concern. Suggestions were made about enforcement of specific routes and times for container truck movement.

Impact on the boat ramp at Penrhyn Estuary	The importance of the boat ramp was emphasised, as were concerns about its existing condition. A number of locations for a new boat ramp were suggested, and recommendations were made for the specific features of the new facility.
Hydrological impacts of dredging and reclamation work	There was concern that the proposed expansion would result in further loss of beach and wetlands in various parts of the Bay. The impact that the development of the Third Runway has had on hydrological conditions in Botany Bay was mentioned, as was the perception that the proposed expansion would have similar negative impacts despite scientific investigations and mitigative measures.
Noise impacts	Local residents were concerned about an increase in operational noise from an expanded port, as they felt that the existing noise level is a problem. Sources of problematic noise included container movements (particularly if a container is accidentally dropped), ship's horns, and port vehicles' reversing sirens.
Visual impacts	There was concern about the visual impact (including light spill and luminance) of more port facilities on the local area. This issue was raised by people whose homes have a vista of the Bay and/or the port. There was also concern about the visual impact of the proposal on recreational users of Foreshore Beach.
Impact on the ecology of Penrhyn Estuary	There was concern about how the proposal would affect the Penrhyn Estuary. Specific concerns included preservation of the existing bird habitat, flushing and water pollution, and public access to the area. A number of suggestions were made for improvements to this area.
Community consultation	Some community members asked for details about consultation activities. There were a range of comments questioning whether the views of the community would be heard by the government.
Environmental management	Appropriate management of the ecologically sensitive areas of the Bay and Penrhyn Estuary was emphasised.
Water pollution	Comments were made about current water quality issues related to pollutants flowing into the Bay from the Mill Stream and the Springvale and Floodvale drains, unrelated to port activity. There was concern that the proposal may have the potential to affect water quality in Botany Bay and the Penrhyn Estuary, through possible disturbance to contaminated sediments in the silt on the Bay floor.
Social impacts	The impact of the proposal on the amenity of the community was of concern to residents. This included concern about overdevelopment in the area and possible health risks.
Opposed (no further comments)	A number of responses, which simply stated opposition to the proposal, were received.
Statutory planning	Some people had questions about how the EIS fitted in with other pieces of legislation, or about the requirements of the EIS.

Aquatic flora and fauna	There was concern about the impact of the proposal on fish stock and seagrasses and the request that this impact be addressed in the EIS.
Hazard and risk	There was concern about the possibility of an accident due to the storage and/or transportation of dangerous goods through residential areas.
Project needs and objectives	There was a perception that the port is not currently being used to full capacity, and that an expansion is not needed.
EIS timing	There were many inquiries about when the EIS would be completed and on public exhibition.
Air Pollution	There was concern about the potential for air pollution in the local Botany area to be increased as a result of the port expansion, by emissions from an increased number of cars, trucks and ships in the area.
Birds	There was concern about the impact of the proposal on the bird life in Penrhyn Estuary and across Botany Bay. The Estuary is a wader bird habitat and community members felt that this habitat should be preserved if the expansion goes ahead.
Impact of Botany freight rail line	Some community members were concerned about how the increased number of train movements on the Botany freight rail line as a result of the expansion would affect them, through noise and vibration impacts.
Property flooding	There was concern that the reclamation work required for the expansion may cause flooding in properties in the Botany area.
Terrestrial flora and fauna	There was some concern about how the proposal may affect the flora and fauna in the Foreshore Beach dunes and other areas near the port.
Geotechnical/geology and soils	There was concern that the proposal could result in erosion around the Botany Bay foreshore.
Property values	It was felt by some community members that the proposal may have a negative impact on the value of properties in the surrounding area.
Freight movements	Some people wanted more information about the amount of freight movements through the port and by what method this freight leaves the port.
Heritage and archaeology	Some people commented that they believed that Botany Bay is a site of significant heritage value, and that this should be addressed in the EIS. There was also interest in whether the indigenous heritage would be addressed in the EIS.
Interference with airport operations	The two issues of concern in this area were that the expansion of the port may cause more planes to fly over Kurnell; and that it may increase the risk of bird strike.
Economic impact	The justification of the proposal on economic grounds was requested.
Botany Bay planning framework	There was some interest about how the proposal is affected by the Botany Bay planning framework.
Enfield proposal	The connection between the two proposals was raised.
Port employment	There was interest in how many jobs would be created by the proposal.

4 EIS exhibition phase consultation

The EIS will be placed on public exhibition by PlanningNSW for a minimum of 30 days.

The exhibition of the EIS provides another opportunity for stakeholders to provide feedback on the proposal through formal submissions to PlanningNSW.

The objectives of Sydney Ports' consultation process during the exhibition phase are to:

- Describe the proposal – background, need, opportunities and mitigative measures.
- Inform stakeholders of the findings of the specialist environmental and technical studies.
- Seek stakeholder responses to the findings of the EIS.

Consultation activities may include distribution of a newsletter, inclusion of advertorials in local newspapers and further presentations and briefings.

Sydney Ports will also be preparing an EIS summary document which will be available at EIS display locations determined by PlanningNSW and on Sydney Ports' website.

The public response mechanisms described in section 2.8 will remain in operation throughout the EIS exhibition phase to enable members of the community to ask questions about the EIS, the PlanningNSW exhibition dates and venues, and the submissions process.

PlanningNSW will advertise EIS exhibition dates and venues in local and metropolitan newspapers. Newsletter 5, which will be letterboxed to the local area will also contain details of the dates and venues.

A Appendix

NOTES FROM FOCUS GROUPS

ENVIRONMENTAL FOCUS GROUP SESSION NOTES

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SUBJECT	Port Botany – Social Impact Assessment and Open Space Concept Planning	DATE	21/5/02
HELD	Tuesday 30 April 2002, Graphic Arts Club, Mascot	OUR REF.	01036

General:

The purpose of the focus group session was to identify:

- The structure and values of the community potentially impacted by the proposal;
- Community views and issues regarding the proposal;
- Opportunities arising from the proposal; and
- Mitigative measures to be considered for the proposal.

Focus group discussion was broad and did not necessarily correspond with agenda items or was not provided to the desired level of detail. We also found that there was repetition in participant responses.

In order for the notes to serve their intended purpose for our social impact assessment and open space concept planning processes, responses have been summarised and categorised into our desired headings (refer below).

Please note that the notes do not necessarily reflect the views of Sydney Ports, Manidis Roberts or the group itself.

Community structure

- Lack of connectivity across environmental groups within the Bay.

Community values

- Environmental community values Port Botany area because it accommodates an important wader habitat in NSW.
- Environmental community values Penrhyn estuary because it is a “hot ecological spot – last spot where congregate before extinction (of shore birds)”.
- Environmental community values Botany Bay because it is the gateway to Sydney.

Community views and issues

- There is not enough consultation and connectivity across groups around the Bay. Some community apathy.
- BBACA participation in process does not mean support of the proposal.
- Environmental groups want to feel part of process.
- Proposal social catchment is wider than those just in Botany ie. Miranda and Enfield are both affected by port activity.
- Lack of strategic planning of Bay.
- Alternative sites must be considered.
- Bay already under pressure.

- Impact on environment vs jobs and the economy.
- Port development is expected to result in:
    - the Bay being filled in essentially losing its primary function. Water will be gone.
    - loss of seagrass beds.
    - loss of marine environment.
    - loss of thin silt marshes.
    - changes to tidal movements and flushing.
    - visual impacts.
    - change in ambience at Penrhyn Estuary.

Opportunities

- Education awareness centres.
- Landscaping around the port.
- Painting of containers.

Mitigation measures

- Compensatory habitat for loss of habitat eg. at Taren Point.
- Alternative sites.

LOCAL COMMUNITY FOCUS GROUP SESSION NOTES

SUBJECT	Port Botany – Social Impact Assessment and Open Space Concept Planning	DATE	21/5/02
HELD	Wednesday 1 May 2002, Graphic Arts Club, Mascot	OUR REF.	01036

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General:

The purpose of the focus group session was to identify:

- The structure and values of the community potentially impacted by the proposal;
- Community views and issues regarding the proposal;
- Opportunities arising from the proposal; and
- Mitigative measures to be considered for the proposal.

Focus group discussion was broad and did not necessarily correspond with agenda items or was not provided to the desired level of detail. We also found that there was repetition in participant responses.

In order for the notes to serve their intended purpose for our social impact assessment and open space concept planning processes, responses have been summarised and categorised into our desired headings (refer below).

Please note that the notes do not necessarily reflect the views of Sydney Ports, Manidis Roberts or the group itself.

Community structure

- Community shift from working class to middle-class residential.
- Community is close knit with evident networks. Community joins together for a cause.

Community values

- Community values natural environment.
- Strong historical connection – 'birthplace of the nation'.
- Need to preserve area for future generations.

Community views and issues

- Sense of pride for area and Council.
- Sense of loss of area.
- Development creates physical split in the community eg. train line, port, airport.
- Marine life destroyed by development / progress.
- Lack of strategic planning of Bay. Need to consider alternative sites.
- Lack of faith in the approvals process.

- Port Botany is a naturally shallow port – not a proper port.
- Port development is expected to:
  - pose risks and hazards given port's proximity to the airport.
  - generate cumulative effects on Botany – rail link, noise and vibration.
  - create visual impacts.
    - cause beach erosion due to dredging.
    - result in loss of seagrasses.
    - change groundwater levels and hydraulics.
    - reduce size of Foreshore Beach.
    - render certain areas unusable ie. restrict access.
    - result in increased shipping and hence will increase pollution of Bay.
    - impact on fishing industry.
- impact on community structure.

Opportunities

- Compensation.

Mitigation measures

FISHING AND BOATING COMMUNITY FOCUS GROUP SESSION NOTES

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SUBJECT	Port Botany – Social Impact Assessment and Open Space Concept Planning	DATE	21/5/02
HELD	Thursday 2 May 2002, Graphic Arts Club, Mascot	OUR REF.	01036

General:

The purpose of the focus group session was to identify:

- the structure and values of the community potentially impacted by the proposal;
- community views and issues regarding the proposal;
- opportunities arising from the proposal; and
- mitigative measures to be considered for the proposal.

Focus group discussion was broad and did not necessarily correspond with agenda items or was not provided to the desired level of detail. We also found that there was repetition in participant responses.

In order for the notes to serve their intended purpose for our social impact assessment and open space concept planning processes, responses have been summarised and categorised into our desired headings (refer below).

Please note that the notes do not necessarily reflect the views of Sydney Ports, Manidis Roberts or the group itself.

Community structure

- Bay used by many different groups – kids, local community, fishermen, gay people, local businesses. Competitions are staged at the Bay.
- Sense of community within the Bay.
- Boating and fishing groups using the Bay are formally organised and make contact.
- Largely labor voting area.

Community values

- Boating and fishing activities in the Bay are part of the 'Aussie' culture.
- Botany Bay valued as a local and regional fishing and boating resource.

Community views and issues

- Port development is expected to:
  - change Bay from naturally shallow port to a deep water port and reduce the size of the Bay.

- require dredging. Dredging results in negative impacts:
  - loss of seagrasses.
  - loss of fish stock.
  - kills oysters.
  - ecosystem changes.
  - disturb potential acid sulphate soils.
  - render a certain good fishing area unusable and will restrict access to certain passages.
  - add to cumulative impacts. Botany Bay is the subject of much development and is already highly developed. Botany Bay is highly industrial.
  - generate visual impacts.
  - generate noise impacts.
  - generate air impacts.
  - increase traffic.
  - impact on the existing boat ramp. There are a limited number of boat ramps throughout Sydney. Bestic Street ramp threatened for closure. No ramp at Kurnell.
- Lack of support for proposal from Botany, Randwick, Rockdale LGAs.
- Lack of faith in approvals process.

Opportunities

- Provision of new, safer boat ramp, with:
  - access for emergency vehicles;
  - multiple lanes;
  - safe lighting;
  - signage;
  - slip lanes;
  - piers;
  - groynes;
  - amenities (rubbish bins, toilet facilities). New boat ramp design to incorporate user knowledge of boat ramp design and function. User fees would contribute to boat ramp maintenance.
- Enhancement of habitat eg. artificial reefs.
- Provision of additional ramp elsewhere in the Bay eg. Kurnell.

Mitigation measures

- Improved boat ramp facility.

FORESHORE BEACH USER FOCUS GROUP SESSION NOTES

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SUBJECT	Port Botany – Social Impact Assessment and Open Space Concept Planning	DATE	21/5/02
HELD	Tuesday 7 May 2002, Graphic Arts Club, Mascot	OUR REF.	01036

General:

The purpose of the focus group session was to identify:

- the structure and values of the community potentially impacted by the proposal;
- community views and issues regarding the proposal;
- opportunities arising from the proposal; and
- mitigative measures to be considered for the proposal.

Focus group discussion was broad and did not necessarily correspond with agenda items or was not provided to the desired level of detail. We also found that there was repetition in participant responses.

In order for the notes to serve their intended purpose for our social impact assessment and open space concept planning processes, responses have been summarised and categorised into our desired headings (refer below).

Please note that the notes do not necessarily reflect the views of Sydney Ports, Manidis Roberts or the group itself.

Community structure

- Foreshore Beach community comprises a number of users (families, dog walkers, runners, swimmers, paddle and surf skiers, birdwatchers) from beyond the Botany LGA eg. Bankstown, Campbelltown, Rockdale LGAs.

Community values

- Foreshore Beach is important resource for mental health, fitness and social activity for both humans and dogs.
- Foreshore Beach is only beach where you don't have to pay to walk dogs (at boat Harbour, pay $10 to walk dog / across beach).
- Historical aspect of Bay highly valued.
- Foreshore Beach valued by the community because of is lack of concrete structures unlike Maroubra or Coogee.
- Beaches and Bay are finite Sydney resources.
- Foreshore Beach users value safe environment.

Community views and issues

- Port Botany development impacts upon whole community not just those adjacent to the beach/port.
- Water at Foreshore Beach perceived to be clean.
- Length of Foreshore Beach appealing to dog walkers.
- Lots of families, particularly Maoris, Tongans and Asians use the beach maybe because there is no surf.

- Beach appealing for it's combing aspects – shells, driftwood.
- Property prices have risen in Botany in recent times. Port proposal likely to impact upon prices.
- No understanding of proposal - just that will lose the whole beach.
- Lack of faith in assessment of alternatives.
- Port development is expected to result in:
  - increased traffic.
  - loss of seagrass.
  - stormwater and groundwater impacts;
  - pollution of Foreshore Beach due to more ships in narrower Bay.

Opportunities

Mitigation measures

MEETING NOTES

SUBJECT	Proposed Port Botany Expansion Social Impact Assessment Foreshore Beach Users Focus Group	DATE	28 April 2003
HELD	Graphic Arts Club	OUR REF.	01036
FROM	6.00 – 8.30pm		
ATTENDEES	5 representatives, including: ■ Botany Environment Watch Sydney Ports Manidis Roberts		

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General

The purpose of the focus group session was to:

- Present information about the proposal concept layout and the public open space design.
- Receive feedback on the proposal concept layout and the public open space design.
- Present the potential impacts and proposed mitigation measures of the proposal.
- Receive feedback on the potential impacts and proposed mitigation measures of the proposal.

These notes are a summary record of the comments made by individuals during the session. The statements recorded here do not necessarily reflect the views of Sydney Ports, Manidis Roberts or all members of the group. Sydney Ports provided verbal responses to all comments and questions during the session..

In order for the notes to serve their intended purpose for our social impact assessment, responses have been summarised and categorised into relevant headings (refer below).

Issues raised by participants included:

- Existing natural appearance of the landscaping between Foreshore Road and the beach is valued.
- Importance of dog walking on Foreshore Beach.
- Swimming risks on the beach related to sewage pollution.
- Restricted access to Penrhyn Estuary.
- The size and location of the boat ramp.
- Maintenance of the public open space areas is important, currently not maintained.
- Visual impacts of container stacks and the noise wall around the new terminal, height of container stacks and height of cranes.
- Ownership and management responsibility for the viewing platforms.
- Noise from containers being dropped and noise from the Botany freight rail line is an issue.
- Traffic on Foreshore Road and truck queuing on roads.

- Recreational boating channel and exclusion zones.
- Marine ecology and the dynamics of the whole Bay.
- A description of the salt marsh.
- Employment opportunities.
- Schedule for dredging works.
- Methods for capping of contaminants.
- The form of the windbreaks.
- Risk management plans and management of dangerous goods.
- Property values.
- Cycleway would attract more people to the area.
- Management plan required for recreational area.
- Digging for bait in the Penrhyn Estuary would not be allowed.
- Would encourage more industry to locate in the area.
- Mixing of boat ramp and Foreshore Beach users and dog walkers.
- Groundwater and flooding.

Suggestions made by the community included:

- Wheelchair accessible Foreshore Road overpass.
- Sydney Ports could work with freight companies to encourage truck traffic to avoid the port during morning and evening peak hours
- An area for truck trailers.
- Vegetation to reduce the visual impact of the noise wall.
- Improve the maintenance.

MEETING NOTES

SUBJECT	Proposed Port Botany Expansion Social Impact Assessment Fishing and Boating community Focus Group	DATE	30 April 2003
HELD	Graphic Arts Club	OUR REF.	01036
FROM	6.00 – 8.30pm		
ATTENDEES	6 representatives, including: ■ La Perouse Windsurfing Association ■ South Sydney Amateur Fishing Association ■ Australian National Sports Fishing Association NSW ■ Amauteur Fisherman Association of NSW Sydney Ports Manidis Roberts		

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These notes are a summary record of the comments made by individuals during the session. The statements recorded here do not necessarily reflect the views of Sydney Ports, Manidis Roberts or all members of the group. Sydney Ports provided verbal responses to all comments and questions during the session.

In order for the notes to serve their intended purpose for our social impact assessment, responses have been summarised and categorised into relevant headings (refer below).

Issues raised by participants included:

- Water quality in Penrhyn Estuary.
- The size of the boat ramp, proposed boarding jetty, car park and lighting.
- The number of other boat ramps in the area and emergency response requirements.
- The orientation of the boat ramp in relation to wind.
- Maintenance of the public recreation areas.
- Demand for the overhead bridge between Sir Joseph Banks Park and Foreshore Beach.
- The proximity of the tug berths to the boat ramp would provide good security – a 24 hour presence.

- Swimming risk at the Mill Stream end of the beach from the Southern and Western Suburbs Ocean Outfall Sewer.
- Fishing access, removal of commercial fishing and impact on fish stocks.
- Access to the boat ramp for emergency vessels.
- The visual impact of the expansion from Kurnell and on users of Foreshore Beach.
- Truck access to local roads.
- Luminance from the expanded port.
- Employment for the local community.
- Traffic management on Foreshore Road.
- Entering and exiting proposed new carpark/boat ramp.
- Details of the schedule for dredging.
- Terminal construction and rail noise.
- Details of the frequency of risk audits.
- The location and dimensions of the recreational boating channel.
- Utilisation of port facilities at Port Kembla and Newcastle.

Suggestions made by participants included:

- Alternative/additional parking in a number of 10-space bays along Foreshore Road, closer to the beach.
- Input from the boating community into the detailed design of the boat ramp.
- Provision of amenities and parking at the Mill Stream end of the beach and closer to the boat ramp.
- Location of coast guard facility at the boat ramp to improve safety.
- A speed limit for tugs in the vicinity of the boat ramp.
- A locked gate at the entrance to the boat ramp carpark to prevent the area being used for drag racing etc.
- Establish maintenance procedures for proposed sediment traps on drains.
- Use of native species of low shrubs, sparse pattern in public areas to enhance security and allow for views of the beach from Foreshore Road.

MEETING NOTES

SUBJECT	Proposed Port Botany Expansion Social Impact Assessment Local community/environment Focus Group	DATE	1 May 2003
HELD	Graphic Arts Club	OUR REF.	01036
FROM	6.00 – 8.30pm		
ATTENDEES	14 representatives, including: ■ Botany Environment Watch ■ Mascot Main Street ■ Save Botany Beach ■ Sir Joseph Banks Park Group ■ South Ward Action Group Sydney Ports Manidis Roberts		

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In order for the notes to serve their intended purpose for our social impact assessment, responses have been summarised and categorised into relevant headings (refer below).

Issues raised by participants included:

- Importance of Penrhyn Estuary as wader bird habitat.
- Height of the pedestrian overpass.
- RTA involvement in the proposed crossings of Foreshore Road and other road work associated with the proposal.
- Capacity of car park.
- Traffic management on Foreshore Road and local roads.
- Maintenance of Foreshore Beach.
- Visibility of cranes from residences.
- Truck traffic on Botany Road.

- Increased rail traffic on Botany freight rail line.
- Trucks parking on local roads.
- Water pollution from the Southern and Western Suburbs Ocean Outfall Sewer.
- Light from the port reflected off low clouds.
- Security.
- Employment opportunities.
- On-site truck queuing.
- Details of the hydrological modeling.
- Number, size and type of ships expected to be berthed at the new terminal.
- The unloading infrastructure.
- Location of dredging.
- The operations of the proposed third terminal.
- Access restrictions during construction.
- Timeframe for the proposal.
- Type and location of stockpiles.
- Process of sediment capping.
- Definition of dangerous goods cargo.

Suggestions made by participants included:

- Double glazing for houses affected by noise.
- Noise barrier between Foreshore Road and Sir Joseph Banks Park.

B Appendix

NOTES FROM STAKEHOLDER BRIEFINGS

URS

URS CORPORATION AND SUBSIDIARIES
MINUTES OF MEETING

Meeting Number	1	Project Number	43027 (5 digits)	012 (3 digits)	(3 digits)

Title of meeting	Date	Time
Port Operators Meeting	21/03/2002	6:30 PM

Present	CC
VOPAC Patricks P&O Sydney Airport Corporation Ltd Sydney Ports URS	

Apologies

Item No.	Item Description
	It was stated that the overall presentation and explanation of the project was impressive. The economics of the project were understood and that the project would be good for economic growth.
	It was acknowledged that Sydney Ports had briefed industry and Sydney Ports encouraged attendees to inform and encourage other port operators who were not present to become involved.
	General feeling and it was stated that operators realised that the expansion would be needed at some stage they would like to be able to co-ordinate with their own growth and needs.
	There was concern over impacts during operation of the project during construction and the impact this would have activities of surrounding operators. It was acknowledged that timing and co-ordination would need to be discussed further.
	It was acknowledged that operations need to be co-ordinated such as Patricks proposal, need for transport and co-ordination of this.
	Traffic and traffic splits was discussed and it was mentioned that discussions were being held with RIC and these would be mentioned in the EIS.
	Impacts on the airport were discussed and crane design which could be used were discussed. More information on the cranes presented by Sydney Ports would be welcomed by attendees. Sydney Ports did mention that shuttle boom is the preferred crane type and crane dimensions would satisfy criteria for safety.
	Transport would be a big issue with the community. Sydney Ports mentioned that modal split was about 25% by rail. Road and rail will dovetail in with the operations
	Timing of the project was discussed and Sydney Ports stated that the project was in the assessment phase and first stage of wharf completion would be by 2008.
	The question was raised as to where the fill would come from to create the land area and Sydney Ports mentioned that areas of tunnelling would be investigated and opportunities do exist such as for example Parramatta Rail Project and Land Cove Tunnel.
	The area of fill would be about 70ha. This will depend on berthing capacity and Sydney Ports will walk industry through this.
	Need for the tugboat area was raised and Sydney Ports stated that that it gives more opportunities and flexibility to operators for manoeuvring.

Item No.	Item Description
	It was asked how long Darling Harbour would keep operating and Sydney Ports stated that there is a lease in place and Sydney Ports has no plans to change that arrangement.
	It was stated by attendees that they wanted to be kept informed.

Authorised by (Chair)	Name of Chair	Date

URS

URS CORPORATION AND SUBSIDIARIES
MINUTES OF MEETING

Meeting Number	1	**Project Number**	43027 (5 digits)	012 (3 digits)	(3 digits)

Title of meeting	**Date**	**Time**
Community Group Briefing 1	25/04/02	6:30 PM

Present	**CC**
Sydney Ports Manidis Roberts URS Wildlife Brighton Le Sands Amateur Fishing Club	

Apologies

Item No.	Item Description	Action By When	Action By Whom
	Attendees were pleased with presentation said it was informative. Attendees believed the project was good for economic growth but general concern is protecting wildlife.		
	Penryhn estuary is a feeding ground for seabirds – dredging and change in character of the area would make these birds disappear regardless if the estuary remained. Therefore compensatory conservation area such as Towra Point should be looked at. This should be linked to education centre for schools and general public. Penrhyn estuary is not an issue – there will be disturbance any way whether it is filled or not. Disturbance of nearby areas will not make it feasible for use as birds will be detracted given activity by the expansion. It was stated that there was no point in trying to save it and compensatory wetlands should be looked at.		

Item No.	Item Description	Action By When	Action By Whom
	Given the point above it was stated that it would be better to fill the estuary and look at the option of compensatory habitat. This however needs to be planned with groups. The example of the little tern relocation during the third runway project was used as what not to do. It was stated that there is no shortage of little terns in the Botany Bay area and these are not at risk on a global scale. The area has been used by migratory species – Patrick site was used 200 years ago by migratory birds. The examples were given of Spring Street, Towra Point, and Marsh Street where vegetation management has not been successful.		
	History of the area was provided and it was agreed that consultants would follow up with attendees to get more information re this.		
	With regard to the boat ramp it was stated that this was used by many people in the eastern suburbs and that it is really the only one available for these people. There must consult with them.		

Authorised by (Chair)	Name of Chair	Date

URS

URS CORPORATION AND SUBSIDIARIES
MINUTES OF MEETING

Meeting Number	2	Project Number	43027 (5 digits)	012 (3 digits)	(3 digits)

Title of meeting	Date	Time
Community Group Meeting 2	4/04/02	6:30 PM

Present

Sydney Ports
URS
Manidis Roberts
Botany Environment watch (BEW)
NSW Wader Study Group
Kurnell Catamaran Club
Professional Fisherman

CC

Apologies

Item No.	Item Description	Action By When	Action By Whom
	Traffic along Botany and Foreshore Road was noted as a key issue.		
	It was also noted that the beach area is extensively used. People use the beach area because it is accessible to them		
	Previous dredging at Towra Point has ruined the opportunity for prawning. Dredging was noted as a key issue regarding fishing activity. The hydrodynamics of the Bay need to be carefully looked at and how this will impact on fishing activity. Interest in studies and methodology on the hydrodynamic and marine process was expressed. It was stated that impacts from the Iluka/Clarence river dredging works should be used to predict impacts and the question was raised if impacts on these areas have been looked at. Dredging and impacts on acid sulphate soils (ASS) were raised and it was stated by the team that contamination and ASS were being investigated in the EIS – studies have been commissioned to assess these.		
	The history of the project was discussed and it was mentioned by a community member that the project was planned in the 1960's. It was clarified by Sydney Ports that all projects have business plans but it does not mean that all go ahead. Planning and accommodating for future growth is part of national growth.		
	Previous dredging in the Bay was raised and there was scepticism amongst the community that dredging of the airport was one also to accommodate growth in Botany Bay.		

Item No.	Item Description	Action By When	Action By Whom
	Extensive consultation was raised and sufficient warning about meetings was raised. Consultants mentioned that they would take this on board and list would be updated to reflect current contact details. It was requested that other community members omitted be indicated to the consultants.		
	Attendees stated that economics and politics would drive the project not community input. In addition to local impacts the regional impacts and cumulative impacts of all proposals in the area should be looked at.		
	It was asked whether ships from Darling Harbour would come through Port Botany. Sydney Ports clarified that cars and activity would still be part of Darling Harbour terminals.		
	Jurisdiction and restrictions on vessels in the channels area was discussed. Waterways Authority has responsibility for this and Waterways/Council has responsibility for the beach area.		
	It was mentioned by Sydney Ports that nothing regarding the project has been set in stone at this stage things are still at proposal level. It is the objective of the EIS process to assess impacts and come up with a design. It was clearly stated that feedback from the community was vital during the study and the purpose of the meeting is to articulate the communities views.		
	Noise generation from containers was a concern. It was stated by the EIS team that noise will be controlled by an EPA licence. The project is an integrated development and a licence would be required by the EPA to operate.		
	Traffic in Foreshore Road was discussed and this is a concern to residents. Traffic capacity and congestion will be addressed in the EIS. The option for using B-doubles was mentioned but was not well received by the attendees.		
	The issue of dangerous goods was raised and how they will be transported. Sydney Ports stated that this was something that needs to be addressed. It was stated that the proportion of containers to dangerous goods is small.		
	Brighton Beach people need to be consulted. Sea levels and activity have changed as a result of past impacts. This has resulted in changes to beach processes (erosion) and impacts infrastructure in the area e.g. roads.		
	The option of using other side of Botany Bay was raised and it was stated by Sydney Ports that the final analysis favoured the north side.		
	Penrhyn estuary and impacts is of main concern to the waders. it was stated that during previous meetings options mentioned have included leaving it completely alone to filling it in. These options will be addressed and further consultation is required.		
	Inclusion of Rockdale and Marrickville Council was raised. It was stated that Sydney Ports meet with them regularly.		

Item No.	Item Description	Action By When	Action By Whom
	Inviting a representative from Freight Rail to next meeting to discuss traffic and model split was requested.		

Authorised by (Chair)	Name of Chair	Date
	Mary Diab	

MEETING NOTES

SUBJECT	Proposed Port Botany Expansion	DATE	8/8/02
HELD	Conference Room, City of Botany Bay Council	OUR REF.	01036
FROM	Eve Tusa		
ATTENDEES	Manager, City Planning, City of Botany Bay (BB) Manager, Parks and Landscapes, City of Botany Bay (BB) Manager, Community Services, City of Botany Bay (BB) Manidis Roberts (MR)		

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General:

The purpose of the meeting was to identify:

- the existing situation and plans for the open space areas adjacent to the port;
- the structure of the community potentially impacted by the proposal;
- community views and issues regarding the proposal; and
- problems and opportunities arising from the proposal.

Meeting discussion was broad and did not necessarily correspond with agenda items. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

	ITEM	ACTION
	Welcome and introductions	
	Manidis Roberts scope of work	
	BB noted that Manidis Roberts have been commissioned by Sydney Ports Corporation to undertake the social impact assessment and open space concept planning.	
	MR added that Manidis Roberts have also been commissioned to undertake the EIS communications.	
	Project status overview	
	MR advised that Manidis Roberts and Sydney Ports Corporation were planning to hold workshops in August and September regarding planning options for the open space areas around the port development. She added that she had already discussed this with MB and extended an invitation to BB.	

	MR stated that council's involvement in these workshops is critical given the open spaces are located within its boundaries. He added that community views would continue to be sought later in the process.	
	Council's view on opportunities arising from the proposal	
	BB suggested that bringing back a pier could be a good thing for the area. This would link the Bay with its past and enable additional access to the water and fishing. Creating a marina could be another opportunity.	
	BB suggested more viewing points.	
	BB stated that council would encourage a bike track that circumvented the Bay. A bike track exists around Kurnell. La Perouse to Brighton is the missing link to the Bay bike track. Connecting the City of Botany Bay with other LGAs around the Bay would be a good thing.	
	BB stated that the RTA pulled out traffic lights between Sir Joseph Banks Park and Foreshore Beach along Foreshore Road. Access to the beach from the park is difficult and would be improved by a pedestrian overbridge.	
	BB added that it would be good if the expanded port area would allow for people to get close to the port and water without impinging on port activity.	
	BB stated that Sir Joseph Banks Park comprised of a man-made bushland and a formal park. The man-made bushland is not perceived to be safe. Signage and pathways would help improve safety and access to the bushland. BB added that the pleasure gardens in the formal park area were heavily utilised.	
	BB suggested barbecue facilities at Foreshore Beach could be a good thing but recognised the difficulty in installing/managing such facilities in a dune area.	
	Council's account of the existing situation and plans for open space areas adjacent to Port	
	BB outlined the areas likely to be redeveloped to accommodate increased densities in the future. BB pointed out that these areas were most likely to depend on the open space areas around the Port. These future residential intensification areas include: ▪ Pemberton & Wilson Streets; ▪ Myrtle & Jasmine Streets; ▪ Folkstone & Chelmsford Streets; ▪ Tupia Street (currently a small industrial estate); ▪ Daphne Street.	
	BB advised that the Sir Joseph Banks Hotel is a heritage item. BB added that new residences had been developed adjacent to the hotel and that the residents were very vocal.	
	BB advised that council had received funding under the Urban Improvement Program to undertake planning for the conversion of an existing industrial area into a residential and mixed-use area. BB added that redevelopment of the existing British American Tobacco site would also be likely in the future.	

	BB stated that some truck drivers use Botany Road instead of Foreshore Road so as to source food. Many truck drivers stop at the cafeteria across from the golf course. It would be good if the port could provide an on-site food facility to avoid truck drivers stopping along Botany Road.	
	BB pointed out that the area had a strong connection to the past. Some residents can recall collecting green and golden bell frogs in the wetlands; others can recall catching lobsters.	
	BB stated that some people find port and airport activity fascinating. A pier or other structure could accommodate plane spotters for example.	
	BB stated that some public areas within the port would be great to watch boats.	
	BB stated that the demographic shift had led to a demand for public art in Sir Joseph Banks Park. Council would welcome funding for public art. Public art could be used to reflect local port activity and history.	
	Council's account of community structures within LGA	
	MR explained what is meant by community structures - were community networks evident? Does the community join together for a cause?	
	BB advised that the community does not comprise organised groups as such, groups are formed on an issues basis. Key players within the community include: Jos Wiggins, Nancy Hillier, Con Savvas (owner of the Sir Joseph Banks Hotel) and Michael Cavanagh (owner of local pharmacy). The Botany Historic Trust plays an important part in the community.	
	BB pointed out that the community is accommodating more and more first home buyers. These residents often move on to Blacktown LGA, Canterbury LGA and sometimes the Randwick LGA.	
	BB stated that local schools were experiencing an increase in pupil numbers.	
	BB stated that members of the public tend to approach the mayor directly when they have a concern.	
	Council's view on community position regarding the proposal	
	BB stated that the community wants to ensure there are some benefits from the proposal.	
	Other	
	BB advised that a funding and an implementation program would need to accompany any open space proposals. This would ensure all parties are accountable ie. Sydney Ports Corporation, City of Botany Bay Council and Randwick City Council.	
	MR advised that she would add BB to the planning workshop invitation list.	MR to send BB invitation to planning workshops.

MEETING NOTES

SUBJECT	Meeting with Randwick City Council	DATE	21/8/02
HELD	Randwick City Council Chambers	OUR REF.	01036
FROM	Eve Tusa		
ATTENDEES	Team Leader Strategic Planning, Randwick City Council (RCC) Social Planner, Randwick City Council (RCC) Manidis Roberts (MR)		

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General:

The purpose of the meeting was to identify:

- The existing situation and plans for the open space areas adjacent to the port;
- The structure of the community potentially impacted by the proposal;
- Community views and issues regarding the proposal; and
- Problems and opportunities arising from the proposal.

Meeting discussion was broad and did not necessarily correspond with agenda items. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

ITEM		ACTION
	Welcome and introductions	
	Outline of Manidis Roberts scope of work	
	MR advised that Manidis Roberts have been commissioned by Sydney Ports Corporation, to undertake the social impact assessment, open space concept planning and general EIS communications.	
	Project status overview	
	MR advised Manidis Roberts and Sydney Ports Corporation were planning to hold workshops in September and October regarding planning options for the open space areas around the port. MR added that she had already discussed this with RCC and extended an invitation to the Coordinator Parks and Recreation.	MR to send workshop invitation to Coordinator Parks and Recreation.
	Council's account of existing situation and plans for open space areas adjacent to Port	
	RCC briefed Manidis Roberts on the issues from Randwick City Council's perspective. RCC referred to a letter forwarded	RCC to forward Randwick City Council's submission to Planning NSW to Manidis

	to Planning NSW and offered to forward it to Manidis Roberts. RCC talked about the economic impacts on Randwick, arising from the proposal. What would be the implications for the industrial areas surrounding the port? Impacts on employment? What are the benefits? What strategies would be used to encourage employment?	Roberts.
	MR asked how many people from Randwick work at the port.	
	RCC advised that council did not have much of this type of information. Council would be getting 2001 Census figures next month. RCC stated that she thought the port was not a huge employer. Port related employees most likely would reside in the southern suburbs of Randwick, ie. immediately around the port. Unlike Botany, the industrial area around the port is not highly port related. Printing and office type uses exist within Randwick's industrial area. RCC added that Randwick would like to retain its existing industrial area. She further added that the port would have a positive impact on retaining industrial employment. RCC advised that Randwick's commercial centres are not substantial. There is no big office component. RCC pointed out that most of the impacts arising out of the proposal would occur within the LGA of Botany Bay. Traffic would be a major impact, largely on local roads within the LGA of Botany Bay. The proposed relocation of the customs examination facility would also result in traffic and environmental impacts given the additional trips currently avoided by the on-site location of the customs examination facility. RCC added that there is a lot of interest in extending the coastal walkway to the national park. Sydney Ports should consider pedestrian and bike links. Impacts on residents would include loss of beachfront. This would impact more on Botany residents given Randwick has other beaches. RCC added that this may mean more traffic and more people at beaches within Randwick.	
	RCC stated that an increase in the workforce at an expanded port facility would mean more people living in Randwick and potentially an increased demand on some of Randwick's facilities, particularly open space.	
	MR asked whether the local accommodation would be affordable to those working in Port Botany.	
	RCC advised that Randwick has the second highest rental prices of NSW LGAs.: $270/1 bedroom; $330/2 bedroom	
	RCC advised that the new SEPP on affordable housing is not	

	yet in place. Low cost housing provision is currently a voluntary arrangement.	
	RCC stated that the port is not ideally located and that an expanded port would be taking away regional space. An alternate location could provide more employment opportunities and benefits. Nevertheless, council does support the port in general and its ratings contributions. RCC added that council has a good relationship with the port and that they are informed on proposals. Despite this, the port expansion would result in a substantial increase to the current facilities. The proposal will impact on traffic. Rail needs to be addressed. Rail mode share should be much greater than the proposed 30-40%. Rail access for employees also needs to be addressed. RCC said that they were not aware of any noise complaints but would need to check on this. The port is so well lit all the time. Lighting impacts should be addressed as part of the new facility. Other impacts that would need to be addressed would include pollution of water, air, groundwater. Visual impacts would also need to be addressed. The view of the port from Frenchmans Bay, for example, is not that pleasant. There is no landscaping. Improvements to the visual appearance would be desirable.	
	RCC advised that council was currently looking at port land for the relocation of its waste recycling facility.	
	RCC asked whether the port facility will operate 24 hours/day. RCC also asked whether the existing facility operates 24 hours/day. RCC added that noise and traffic would be issues if facility is to operate 24 hours/day.	
	RCC advised that loss of Foreshore Beach is a regional open space issue. RCC added that regional funding had gone into Foreshore Beach. RCC further added that Foreshore Beach had been diminished with the Third Runway. RCC advised that linkages with Botany and Rockdale are important. RCC suggested that an opportunity to reinstate links via this proposal would be a real benefit. RCC further added that safe bike opportunities would be great. RCC advised that council is currently preparing a 20 year strategic plan and was looking at improving coastal walkways and providing better links. RCC suggested that the most likely catchments for employment at the port would be Rockdale and Kogarah and that rail links from these catchments to the port would be good and should be encouraged by this proposal.	

	RCC advised there is a boat ramp at Frenchmans Bay and small boating area at Gordons Bay and Clovelly Bay. RCC added that there is a perception that there is a lack of active open space within Randwick. RCC further added that appropriate management of open space areas is required to ensure they are kept in reasonable state.	
	RCC asked to what extent there would be flow on economic benefits to Randwick. How would they be distributed and how could they be maximised?	
	MR stated that Randwick's industrial area would most likely benefit from the proposal.	
	RCC asked what the implications for future development around the port would be. What are likely safety hazards and risks?	
	Council's account of community structures within LGA	
	MR explained what is meant by community structures - were community networks evident? Does the community join together for a cause?	
	RCC advised that they have local precinct groups which are consultative mechanisms for council. They are purely local residents. RCC pointed out that there are a number of networks – local, multicultural, women's services, disabilities, general. These networks meet monthly.	
	RCC advised that there are six Chambers of Commerce within the LGA. They also have a multicultural Consultative Committee. RCC advised that the northern part of the LGA is more active than the southern part. There is a local neighbourhood centre in Matraville. There are two Aboriginal groups in the La Perouse/Phillip Bay area. The Aboriginal community is not very big, about 1,500 residents.	
	MR asked whether there were any social issues in the port area.	
	RCC advised that public housing in the area around the port is an issue. RCC added that there is a perception that the southern part of the LGA is under provided with respect to facilities and less supported. The absence of a youth centre within the LGA is an issue.	
	Council's view on community's position regarding the proposal	
	RCC stated that the proposal had been mooted for sometime.	

	There will be some local concerns and precinct groups would come back with some key issues. RCC added that Botany resident concerns would be stronger than Randwick concerns. The southern areas of Randwick, near the port, aren't as organised as their northern counterparts. RCC stated that if the proposal has some benefits and the community is well consulted they will not be hugely concerned. RCC pointed out that the initial announcements would have raised the biggest concerns. RCC further pointed out that residents don't always get the local papers. The community needs to be well informed. Council sends precincts information on a weekly basis for distribution.	
	MR asked whether the port proposal is likely to be an election issue.	
	RCC replied that the port proposal was not really an election issue although the Greens councillors are likely to be interested.	
	Council's view of problems and opportunities arising from the proposal	
	MR asked whether there were any other problems and opportunities arising from the proposal.	
	RCC advised that the timing of the proposal needed to be clear and the community's opportunity for input also needed to be clear. She again pointed out that the local paper is not completely comprehensive in coverage. She suggested council be provided with newsletters.	

SUMMARY OF MEETING NOTES

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SUBJECT	Meeting with Rockdale City Council	DATE	29/8/02
HELD	Rockdale City Council Chambers	OUR REF.	01036
FROM	Eve Tusa		
ATTENDEES	Manager, Transport and Infrastructure, Rockdale City Council Environmental Planner, Rockdale City Council Manidis Roberts		

General:

The purpose of the meeting was to:

- Provide an update on the proposal;
- Identify Council's position regarding the proposal; and
- Identify Council's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- Rockdale Council does not yet have a position on the proposal given the impacts on Rockdale are yet to be confirmed.
- Rockdale Council does not believe it is their role to consider public realm planning issues. Manidis Roberts should be talking to those who use this open space ie. fishing groups, sailboarders.
- The proposal is likely to result in massive capital investment in the region which will intensify business and employment.

Council issues:

- Transport. Proposal would result in a significant increase in heavy vehicle traffic. Road network cannot cope with more heavy vehicle traffic. Rockdale does not want to see any more road traffic.
  - 99% of existing freight is transported by road. Most heavy vehicles travel through Rockdale or Marrickville. The M5 East accommodates a lot of this heavy vehicle traffic but not all eg. dangerous goods. Original figures showed the doubling of container movements in 10 years and the tripling in 20 years. The M5 East has already reached its maximum capacity of 86,000 cars/day. Approximately 70,000 cars/day travel on the M5East daily (SPC advised that 75% of container traffic is moved by road and 25% by rail).
  - Enfield not viable solution. Need five Enfields to address the road traffic problem otherwise you just shift the problem elsewhere to another highly concentrated area.
- Air quality. Proposal would result in an increase in pollutants.

- Sophisticated options should be explored in the EIS eg. making gas powered trucks mandatory.
- Increased heavy vehicle traffic in M5 East has caused the air quality standards to be exceeded on a number of occasions. Heavy vehicles produce most of the pollutants. If have more heavy vehicles using the M5East, will have more exceedances and the M5East will be shut down during such times which will cause chaos.
- Botany freight rail line between Campbelltown and Port Botany needs to be addressed at a Federal level to accommodate increasing air and sea container loads.

- Public transport for port employees should be addressed. Shuttle bus from Domestic station to port?
  - The Airport Link has not adequately provided for the transport needs of airport employees. Many shifts commence at 5 am and the rail network comes on line at 5 am so many people are forced to drive to work.
- Hydrodynamics. Third Runway affected the beaches in Rockdale. What impact will port have on beaches, sandbars, tides, wave patterns, underwater channels?
- Penrhyn estuary provides foraging habitat for wading birds. Birds live at Towra but feed at the Penrhyn estuary. How will port impact on this area? A greater concentration of birds could pose an issue for SACL.
- Dredging. The port expansion will require dredging which changes the nature of the Bay.
- Impact on seagrasses? The third runway disturbed seagrasses and these could not be reestablished between the runways because of a lack of tidal flow.
- Rockdale's cycleway and pedestrian pathway ends at airport. Bay trail currently being investigated by Sutherland Shire Environment Centre.

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SUBJECT	Meeting with Marrickville Council	DATE	3/9/02
HELD	Marrickville Council	OUR REF.	01053
FROM	Anna Mitchell		
ATTENDEES	Director, Environmental Services, Marrickville Council Manager, Communication and Cultural Services, Marrickville Council Manager Strategic, Marrickville Council Manager, Environmental Services, Marrickville Council Sydney Ports Corporation Manidis Roberts		

General:

The purpose of the meeting was to:

- provide an update on the proposal;
- identify Marrickville Council's position regarding the proposal; and
- identify Marrickville Council's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- Marrickville Council has made preliminary comments on the proposal through SSROC.
- Road and rail traffic is already a problem in the Marrickville area. Council is concerned the expansion would have an impact on the levels of road and rail traffic in the area.

Issues raised:

- Increased truck traffic – there is currently a lot of truck traffic passing through the Marrickville Council area travelling from Port Botany to the western suburbs and Parramatta Road. Council wants to substantially reduce truck traffic from its area, and has completed a pre-feasibility study for an underground truck tunnel linking the Princes Highway to Parramatta Road. Council has approached the State Government for support for this plan.
- Increased rail traffic - Council supports an increased modal share of freight leaving the port by rail for ESD reasons. However, Council has concerns about the effect of increased rail movements on local residents. Noise generated by the Botany freight rail line is currently a problem for residents living adjacent to the line. This will be exacerbated by RIC's duplication of the line. RIC has recently undertaken community consultation with local residents in relation to the possible construction of noise barriers along some sections of the line. The community

is divided in response to the barriers. Freight movements often occur at night when the level of background noise is low.

- Cooks River rail yard – Noise generated by train shunting in the yard is a problem for local residents, although rail movements in the yard are generally not related to Port activities.
- Other concerns raised by residents in the Marrickville area – vibration and structural damage caused by freight train movements. Residents in the area have a number of difficult environmental conditions, including plane noise, and the cumulative effect must be addressed.
- Regional issues – Possible impacts on flora and fauna habitat?
- The Southern Sydney Catchment Management board is a stakeholder who should be included in the consultation.

SUMMARY OF MEETING NOTES

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SUBJECT	Meeting with Sutherland Shire Council	DATE	4/9/02
HELD	Sutherland Shire Council	OUR REF.	01053
FROM	Anna Mitchell		
ATTENDEES	Director, Environmental Services Division, Sutherland Shire Council Environmental Scientist, Sutherland Shire Council Environmental Scientist, Sutherland Shire Council Strategic Planner, Sutherland Shire Council Manager, Coastal Team, Sutherland Shire Council Sydney Ports Corporation Manidis Roberts		

General:

The purpose of the meeting was to:

- provide an update on the proposal;
- identify Council's position regarding the proposal; and
- identify Council's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- Council is mainly concerned with how the proposal could impact Botany Bay as a whole, and in particular the southern shores. Sydney Ports advised Council that these issues and others discussed in the meeting would be passed on to the relevant specialists and canvassed in the EIS.

Issues raised:

- **Impact on Botany Bay** – Council believes that this proposal will have less impact on the Bay than the previous reclamation work. Council expects the EIS to be very rigorous and expects guarantees relating to impacts.
- **Issues for consideration in EIS** – Council emphasised that the following issues need to be addressed in the EIS: aquatic flora and fauna, geotechnical study (including acid sulphate soils), terrestrial flora and fauna.
- **Recreational boating** – what will the impact be on jet skis and other recreational water vehicles, as the development envelope area is currently used for recreation?
- **Birds** – what will the impact of the proposal be on birds who use other areas of the Bay?
- **Hydrodynamics** – must be looked at in a whole of Bay context, as the cumulative impacts of development must be addressed. What are the thresholds of environmental tolerance?

- **Sedimentation** – The area for development is a sediment deposition zone and is probably contaminated. As the proposed development will disturb this area, contamination may be redistributed to the other side of the Bay, and also suspended in the water affecting water quality.
- **Visual impact** – The Port has a visual impact on the whole Bay. Council is implementing a cultural shift in the way industry traditionally relates to waterways in the area. Council is concerned that the proposal could be seem as reinforcing the traditional way rather than refocussing and looking forward into the Bay.
- **Alternative sites in Botany Bay** – Council suggested that an extension to the east of the Bulk Liquids Berth would have less environmental impact, and should be addressed in the EIS.
- Will there be improvements to **container handling systems** that will increase port capacity?
- **Enfield** – Is the Port Botany proposal dependent on the Enfield proposal from a regional transport perspective?
- **Shipping trends** – The EIS needs to detail shipping trends and patterns. What kind of products will be traded and where will the ships be coming from, as there could be an environmental impact eg ballast water?

SUMMARY OF MEETING NOTES

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SUBJECT	Meeting with Kogarah City Council	DATE	5/9/02
HELD	Sutherland Shire Council	OUR REF.	01053
FROM	Anna Mitchell		
ATTENDEES	Manager, Environmental Services, Kogarah City Council Senior Urban Planner, Kogarah City Council Manager, Community Services, Kogarah City Council Stormwater Technical Officer, Kogarah City Council Sustainability Co-ordinator, Kogarah City Council Sydney Ports Corporation Manidis Roberts		

General:

The purpose of the meeting was to:

- Provide an update on the proposal;
- Identify Council's position regarding the proposal; and
- Identify Council's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- Council raised a range of issues related to potential impacts of the proposal. The most significant were increased traffic to the area, and the cumulative effects of increased development in the area. Sydney Ports advised Council that these issues and others discussed in the meeting would be passed on to the relevant specialists and canvassed in the EIS.

Issues raised:

- Dredging – Council is concerned about the effect of dredging on wetlands and about flushing of the Penrhyn Estuary as on the diagram it appears as if it is completely enclosed. Council is concerned that further beach loss may occur after the construction of the proposed expansion.
- Rail freight – Council believes that there has been a ministerial announcement that a proposed enhancement of the railway line has been suspended, and that this means that the Port expansion could not go ahead. If the rail line is already at capacity and is not going to be upgraded, how will extra freight be dealt with?
- Transport strategy – A transport strategy for the proposal is required.? Council is concerned about extra freight being transported by road. Where does the freight go to? What are freight routes? What are the dangerous goods routes? B-doubles can't go on the M5. What is the modal split? If freight is used in western Sydney, then Port

Kembla would be more convenient. Council recognised that an alternative site would result in higher transport costs.

- Alternative sites – Perhaps Wollongong or Newcastle would be better locations due to the environmental impacts of the proposal in Botany Bay. The expansion would be better located on the eastern side of the existing port.
- Impact on recreational areas – Council is concerned about the visual impact of the proposal and the impact on the beach, ie how much beach will be left?
- Water quality – Is Sydney Ports taking steps to address existing water quality issues? Concern about flushing of Penrhyn Estuary in terms of water quality. There is a perception that the water at Foreshore Beach is very clean, and it is heavily used by families. Nona Ruddell and Sydney Ports advised that the current water quality was not 'pristine" and that signs indicate not to swim or fish in the area.
- Projected employment – The size and structure of the workforce is going to have an impact. Is this workforce available locally? How many new staff will be required? Where will they come from? How will they get to the port? Is there a need for affordable housing to be provided in the area? If a breakdown of the workforce is provided, then you can get an idea of the services required.
- Traffic – The area is already congested, and Council is concerned about an increase in traffic related to the airport, port freight and port workers. The lack of public transport to the port needs to be addressed.
- Consultation process – What is the consultation process from now on? How will further details of the proposal be communicated? Council cannot address specific concerns from residents on large projects like this, so a system needs to be in place for the public to get more information. Sydney Ports described consultation activities occurring prior to lodgement of the EIS.
- Cumulative impacts – Council is concerned about the impact of the proposal on the whole region. There is also concern about the increased traffic generated by an increase of 5-30,000 residents in each of the local council areas as part of the councils housing strategies.

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SUBJECT	Meeting with Environment Protection Agency (EPA)	DATE	18/9/02
HELD	EPA offices, Parramatta	OUR REF.	01053
ATTENDEES	Project Officer, Chemicals and Waste, EPA Senior Regional Operations Manager, Sydney Local Government Branch, EPA Sydney Ports Corporation Manidis Roberts		

General:

- The purpose of the meeting was to:
- provide an update on the proposal
- identify EPA's position regarding the proposal; and
- identify EPA's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- The EPA raised a number of environmental issues that need to be thoroughly addressed in the EIS, eg the impact of dredging, acid sulphate soils, contaminated sediment and migratory birds. The EPA also mentioned that noise is an important issue.
- The EPA discussed the various ways in which it will be involved in the approvals process for the proposal.
- Sydney Ports advised the EPA that these issues and others discussed in the meeting would be passed on to the relevant specialists and canvassed in the EIS.
- Issues raised:
- **Timing of the EIS** – When will the EIS be lodged? Sydney Ports advised that they anticipate that the EIS will be lodged mid 2003.
- **Botany Bay planning framework** – What is the impact of Minister Refshauge's announcement on the proposal? Sydney Ports advised that the Port Botany Expansion EIS is continuing to be developed, and they understand that, following Minister Refshauge's announcement, it will be assessed under the new planning framework.
- **Enfield** – Is the proposal reliant on the Enfield proposal going ahead? Is the increased modal split of freight on rail dependent on the Enfield proposal going ahead? Sydney Ports advised that the proposal for Botany is not reliant on Enfield, which is a logistics solution providing the opportunity to improve the movement of cargo.
- **Consideration of Botany Bay as a whole** – The EIS must consider the impact of the proposal on the whole of the Bay, not just the immediate vicinity.
- **EPA's role in approvals** – The EPA is the regulatory authority for construction of the proposed expansion, and possibly for the operations of the new terminal. The EPA may also need to issue licenses for aspects of the

proposal such as dredging. The EPA is an approval body for the EIS – they will provide Planning NSW with terms of approval. Consent conditions for the proposal could include an environmental management resource, i.e. somebody working for PlanningNSW and being paid for by the proponent, who is responsible for implementing the conditions of consent. The EPA is concerned with the construction phase of the proposal but also with the design phase to ensure that operations will be best practice.

- **Dredging** – The impact of changed wave patterns needs to be addressed. The impact of the third runway was not accurately predicted in terms of wave formations. The proposal will need to provide a very detailed study of the impact of dredging. There is also a risk of finding and moving contaminated sediments when dredging. If they are found, how will they be dealt with? The EPA suggested that Sydney Ports investigate whether contaminated sediments were found when dredging was done for the third runway.
- **Acid sulphate soils** – The issue of acid sulphate soil must be investigated. Dredging may cause this material to become exposed to oxygen which is when it becomes problematic.
- **Water quality** – Water quality in the Bay needs to be continually improved. There is currently pollution in the Bay from sewage overflow in wet weather.
- **Penrhyn Estuary** – The EPA is concerned about flushing of the Estuary and the possibility of moving contaminated sediments from the Estuary.
- **Noise impacts** – the EPA believes that the highest noise impact will occur during construction, but there will also be an ongoing impact on local residents. The EPA will look closely at this issue as they already receive noise complaints from local residents about port operations. Reversing beepers are the main cause of complaints and the EPA suggests that management techniques used at White Bay be addressed for Port Botany.
- **Migratory birds** – Impact on migratory birds must be addressed in the EIS.
- **Sir Joseph Banks Park** – The possibility of linking the park to Foreshore Beach should be investigated. The park is already noisy due to trucks on Foreshore Road, and more noise in the area would be a problem.
- **Community consultation** – The EPA has highlighted the need for community consultation in the Director General's requirements.
- **Environmental offsets** – Environmental offsets may be addressed in relation to the proposal. They don't have to be engineering based, they can include restoration of natural areas etc. The EPA advised that information on offsets can be found in the "Green offsets" concept paper developed by the EPA.

SUMMARY OF MEETING NOTES

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SUBJECT	Meeting with Sutherland Shire Environment Centre	DATE	17/9/02
HELD	Sutherland Shire Environment Centre	OUR REF.	01053
ATTENDEES	Three representatives from Sutherland Shire Environment Centre Sydney Ports Corporation Manidis Roberts		

General:

The purpose of the meeting was to:

- provide an update on the proposal
- identify Sutherland Shire Environment Centre's position regarding the proposal; and
- identify Sutherland Shire Environment Centre's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- Sutherland Shire Environment Centre ("the Centre") raised concerns about a number of specific environmental issues related to the proposal, eg dredging and seagrasses, and also raised concerns about broader issues such as a the need for a regional transport strategy, consideration of alternative sites and cumulative impacts on the southern side of the Bay. Sydney Ports advised the Centre that these issues and others discussed in the meeting would be passed on to the relevant specialists and canvassed in the EIS.

Issues raised:

- **Timing of the EIS** – When will the EIS be lodged? Sydney Ports advised that they anticipate that the EIS will be lodged mid 2003.
- **Alternative sites** – Why is Botany Bay preferred over Newcastle or Port Kembla? There should be a comprehensive plan for all three ports, rather than it being an either/or situation. This makes it easy for the community to believe that another location is the solution. Sydney Ports is only seriously considering Botany Bay, not other locations. The EIS is required to demonstrate the need, viability and examination of alternative sites, origin and destination studies and shipping requirements.
- **Regional transport strategy** – The Centre suggested that a freight strategy needs to be in place before an expansion is planned. Freight transport needs to addressed across the state by the NSW Government in order to achieve sustainable development.
- **Enfield proposal** – The Centre was interested in the current status of the Enfield proposal. Are other commercial interests considering development of the Enfield site? Have sites other than Enfield been addressed for the intermodal terminal? What is Patricks' interest in Enfield? Despite interest in the proposal, the Centre does not anticipate that it will be taking an active role in that debate, as there are other groups already in that role. The Centre believes that the Enfield/Strathfield community is very concerned about the impact of the proposed Enfield terminal on traffic in their local area. Sydney Ports advised of the current status of the Enfield proposal, and explained that the independent review is anticipated to report in November 2002.

- **Dredging** – The Centre stated that the 7th Co-generation Inquiry indicated that only the southern third of the Bay is environmentally healthy, as the rest has been damaged by dredging. It would be very hard for any environmental group to support the expansion as dredging has serious environmental impacts. Weedy Pond at Taren Point, once a freshwater pond, is now saltwater due to storms and changes in wave patterns. The local community worked hard to try to preserve the freshwater pond.
- **Botany Bay planning framework** – What is the impact of Minister Refshauge's announcement on the proposal? Sydney Ports advised that the Port Botany Expansion EIS is continuing to be developed, and following Minister Refshauge's announcement, it will be assessed in light of the new planning framework.
- **Impact on southern shores of Bay** – The Centre is concerned about the impact of the proposal on the southern shores of Botany Bay, including loss of flora due to changes in wave patterns. Sutherland Council has proposed that they buy back parts of Kurnell for rehabilitation so that the area can be used for tourism and recreation purposes.
- **Seagrasses** – The Centre is concerned about the impact of the proposal on the native seagrasses in the Bay.
- **Wetlands** – The Centre is concerned about the impact of the proposal on Penrhyn Estuary.
- **Botany Bay Trail** – The Centre has been involved with the pre-feasibility study for the Botany Bay Trail. Issues identified during the study include locals wanting access to Foreshore Beach from Sir Joseph Banks Park, as crossing Foreshore Road is hazardous; and the existence of a Green and Gold Bellfrog habitat in the ponds in Sir Joseph Banks Park. Cycleways through the park may impact on this habitat. The Centre suggested that if the proposed cycleway was along the southern side of Foreshore Road this would lessen the impact on the frog habitat and also be a more direct route for commuters.
- **Public realm planning** – the Centre would be interested in being part of future stakeholder involvement with options put forward for the public realm.
- **The Centre's position on the proposal** - The Centre stated that it may provide comment on the proposal and input into the EIS but this does not mean that they support the proposal. Sydney Ports advised the Centre that the various issues they had raised would be canvassed in the EIS.

SUMMARY OF MEETING NOTES

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SUBJECT	Meeting with SSROC	DATE	10/9/02
HELD	SSROC offices, Hurstville	OUR REF.	01053
FROM	Eve Tusa		
ATTENDEES	Executive Director SSROC Sydney Ports Corporation Manidis Roberts		

General:

The purpose of the meeting was to:

- provide an update on the proposal;
- identify SSROC's position regarding the proposal; and
- identify SSROC's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- SSROC's position is essentially their submission to Planning NSW (Director General's Requirements).
- Transport is the SSROC key issue. The proposal is likely to result in a significant increase of road traffic. Councils would be more concerned about the additional road traffic likely to be generated from the proposal than the look of the expanded port. Sydney Ports advised SSROC that these issues and others discussed in the meeting would be passed on to the relevant specialists and canvassed in the EIS.

Issues raised:

- **Enfield**. If the Enfield proposal is halted the Port Botany proposal should also be halted.

  Timing of the review of Enfield is an issue.

  One of the key selling points of the Port Botany proposal has been the increase in rail mode share. Without Enfield this is not a real selling point.

  Port Botany EIS needs to consider scenarios with and without Enfield.

  Review into Enfield should examine alternative sites.

- **Projected employment** for the expanded port should be addressed in the EIS. What kind of workforce would be required at the expanded port facility? Where would employees come from? Where would they live? St George and Eastern suburbs are becoming unaffordable.
- **Timing** of Port Botany EIS? Sydney Ports advised that they anticipate that the EIS will be lodged mid 2003.
- **Costs** to future communities and generations, in relation to loss of open space, need to be addressed in EIS. Cost on those living near the port, whose property prices may be adversely affected, needs to be addressed in EIS.
- How will the Minister for Planning's **new planning framework** affect the Port Botany proposal? The recent media release was unclear on what projects were likely to be assessed under this framework.

- What is the impact on the **airport**?
- **Dredging** impacts need to be assessed. What effects would dredging have on nearby beaches? Will dredging be required to accommodate the new generation ships?
- **Cumulative impacts** need to be assessed.
- **Alternatives** should be explored. Newcastle and Port Kembla. What are the destinations of imports and exports?
- What is the broader **consultation** strategy?

SUMMARY OF MEETING NOTES

SUBJECT	Meeting with Sutherland Shire Tourism Association	DATE	3/9/02
HELD	Sutherland Shire Tourism Association office	OUR REF.	01053
FROM	Anna Mitchell		
ATTENDEES	2 representatives from Sutherland Shire Tourism Association Sydney Ports Corporation Manidis Roberts		

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General:

The purpose of the meeting was to:

- provide an update on the proposal;
- identify the Association's position regarding the proposal; and
- identify the Association's view of problems and opportunities arising from the proposal.

Meeting discussion was broad. Please note that the notes do not necessarily reflect the views of Sydney Ports or Manidis Roberts and may not be factually correct.

Overview:

- The Sutherland Shire Tourism Association (the Association) sees a number of opportunities for Sydney Ports to contribute to the tourism potential of the region.
- Sydney Ports involvement in the regional tourism industry is largely outside the scope of the proposal, and therefore another meeting will be held between the Association and Sydney Ports to discuss these issues.

Issues raised:

- Tourism South – The Association is developing a tourism strategy for the region called Tourism South, and has met with mayors and general managers of all the local councils. The Association believes that Sydney Ports can also play an important role in the development of this strategy.
- Botany Bay ferries – An initiative to be addressed for Tourism South is the re-introduction of a tourist ferry service within Botany Bay. A study completed by Patterson Britton supported the re-introducion of a ferry service. Waterways has indicated that they would be prepared to be a partner in such a venture. There is a concern about ferries conflicting with container ships.
- Wharves - A ferry service would require the construction of more wharves in the Bay. The Association suggests that a wharf would be constructed in the Foreshore Beach and/or at the rear of the International Terminal. The National Parks and Wildlife Service has expressed an interest in utlilising the Kurnell wharves for a ferry service. Rockdale Council has plans for a wharf at Brighton for use as a tourist venture and also for emergencies.
- Impact on Foreshore beach – Will the whole beach be removed in the expansion?
- Other tourism developments in the Botany Bay area – the Association outlined a number of tourism ventures currently underway in the region:

- Brighton being developed as a ‘Norton Street’ style restaurant precinct
- The Festival of Sails in April
- A whale shaped walking track, visible from planes landing/taking off, is being developed at Marton Park in Kurnell
- Sutherland Shire Council is funding a sculpture walk along Silver Beach

- Sponsorship from Sydney Ports – the Association is interested in discussing sponsorship opportunities with Sydney Ports. A separate meeting will be held between the Association and Sydney Ports to discuss this issue.

MEETING NOTES

SUBJECT	Proposed Port Botany Expansion Environment and Community Stakeholder Briefing	DATE	6 May 2003
HELD	Stamford Airport Hotel	OUR REF.	01053
FROM	5.30 – 7.30pm		
ATTENDEES	Botany Bay & Catchment Alliance Bankstown Bushland Botany Bay Planning and Protection Council Sutherland Shire Environment Centre Birds Australia Airport Environment Protection & Building Control Office NSW Road Transport Association Southern Sydney Catchment Board NSW Wader Study Group Botany Eastern Region Environment Protection Association 2 community representatives Sydney Ports Corporation Manidis Roberts		

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General

The purpose of the stakeholder briefing was to:

- Present information about the proposal concept layout, the public open space design and the potential impacts and proposed mitigation measures of the proposal.
- Receive feedback on the proposal concept layout, the public open space design and the potential impacts and proposed mitigation measures of the proposal.

These notes are a summary record of the comments made by individuals during the session. The statements recorded here do not necessarily reflect the views of Sydney Ports, Manidis Roberts or all members of the group. Sydney Ports provided verbal responses to all comments and questions during the session.

Issues raised by participants included:

- Capacity of on-site truck parking.
- Impact on seagrass habitat.
- Importance of Estuary as wader bird habitat.

- Impact on Foreshore Beach.
- Height of containers stacked on new terminal.
- Height of pedestrian bridge above Foreshore Road.
- Visual impact from viewing platform in Sir Joseph Banks Park.
- Water quality in Penrhyn Estuary.
- Trucks parking on Foreshore Road
- Bay wide hydrodynamics.
- Type of edging between edge of terminal and Estuary.
- Operations of proposed new terminal.
- Depth and quantity of dredging.
- Maintenance of Penrhyn Estuary and Foreshore Beach.
- Maintenance of silt curtain.

Suggestions made by participants included:

- Truck stop to get trucks of Botany Road.
- Wheelchair accessible overpass.
- Weighbridge on Foreshore Road as part of proposal.

MEETING NOTES

SUBJECT	Proposed Port Botany Expansion Local Government Stakeholder Briefing	DATE	7 May 2003
HELD	Stamford Airport Hotel	OUR REF.	01053
FROM	2.00 – 4.00pm		
ATTENDEES	Urban Planner, Kogarah Council Environmental Planner, Rockdale Council Director Technical and Regulatory Services, City of Botany Bay Manager Parks and Landscapes, City of Botany Bay Strategic Planner, Marrickville Council Regional Projects Manager, SSROC Strategic Planning, Randwick City Council Assessment Planning, Randwick City Council Sydney Ports Corporation Manidis Roberts		

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- These notes are a summary record of the comments made by individuals during the session. The statements recorded here do not necessarily reflect the views of Sydney Ports, Manidis Roberts or all members of the group. Sydney Ports provided verbal responses to all comments and questions during the session.

Issues raised by participants included:

- Relationship between Port Botany and Enfield.
- Volume of traffic.
- Location, size and design of boat ramp.
- Transplantation of salt marsh.
- Capacity of car park.

- Mangroves versus saltmarsh for enhancing flushing of the Estuary.
- Construction noise effects on birds.
- Viability of Penrhyn Estuary as a bird habitat.
- Impact of Springvale and Floodvale drains on Penrhyn Estuary.
- Visual impact of new terminal from beach.
- Straddle crane operations are preferable to 'fork lift' type
- Ownership and maintenance of Estuary and Foreshore areas.
- Width of rail corridor.
- Impact on housing affordability.
- Construction period.
- Height of container stacking.
- Capacity of customs x-ray facility.
- Removal of material from sediment traps in the Estuary.
- Requirements for servicing terminal operations eg warehousing.

Suggestions made by participants included:

- Underground boat ramp car park.
- Rail viaduct on terminal area.
- Truck stop.
- Kiosk/shop.
- Containers stacked underground on the terminal.
- Planting along rail line.
- Noise barriers along rail line.
- Possibility of regulating the height of containers.
- 300 metre rail sidings on the terminal.

MEETING NOTES

SUBJECT	Proposed Port Botany Expansion Industry and Tenants Stakeholder Briefing	DATE	8 May 2003
HELD	Stamford Airport Hotel	OUR REF.	01053
FROM	2.00 – 4.00pm		
ATTENDEES	Caltex Adsteam Sea Freight Council of NSW Elgas Orica Sydney Ports Manidis Roberts		

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These notes are a summary record of the comments made by individuals during the session. The statements recorded here do not necessarily reflect the views of Sydney Ports, Manidis Roberts or all members of the group. Sydney Ports provided verbal responses to all comments and questions during the session.

Issues raised by participants included:

- Location of tug wharf.
- Safety issues of boat ramp location close to open water.
- Impact of tug draft on recreational boats and depth of tug berths.
- Issues of fishermen currently using tug wharf.
- Continuation of tug moorings along parallel runway.
- Access to Foreshore Road from boat ramp, beach and terminal.
- Current train movements.
- Safety management procedures used at other ports.
- Maximum number of train movements on line.
- Timing of approval and construction of the tug wharf.
- Size of road bridge.
- Trade growth drivers eg population.

- Growth in contanerisation.
- Alternate locations – Newcastle and Port Kembla.
- Capacity constraints – berth.
- Traffic volumes and synchronised traffic lights.
- Train length.
- Origin and destination of cargo.

Suggestions made by participants included:

- Boat ramp car park on a different angle.
- Traffic within port precinct managed internally.
- Management of traffic light timing.

C Appendix

NEWSLETTERS

SYDNEY PORTS

newsletter

FEATURE: PROJECT OVERVIEW

PROPOSED PORT BOTANY EXPANSION | FEBRUARY 2002 • NUMBER 1

Introduction

Sydney Ports Corporation was established in 1995. It is responsible for the management and development of port facilities and services to cater for existing and future trade needs.

Sydney Ports is progressing plans to meet the growth in demand for additional container handling facilities in Sydney. An integrated vision has been developed for the future of Sydney's ports which incorporates the expansion of port facilities and wharf space at Port Botany.

On the 24 November 2001 the NSW State Minister for Transport, Mr Carl Scully MP, announced plans for Sydney Ports to commence the process for the preparation of an Environmental Impact Statement (EIS) for the expansion of port facilities at Port Botany.

This is the introductory issue of a series of newsletters which will provide updates to the community during the preparation, exhibition and assessment of the EIS for this project. The EIS will be lodged in late 2002.

LOOKING TO THE FUTURE

The proposed reclamation of land at Botany Bay for new port facilities represents a comprehensive solution to the future capacity constraints facing Port Botany. It will enable Port Botany to remain a key port in the NSW freight network, and continue as one of the most significant trade links in Australia.

The proposal will ensure that Sydney and NSW benefits from Port Botany remaining as the primary container terminal in NSW, and the region and state continue to be well placed to meet future trade demands.

THE PROJECT

The reclamation within an area of some 70 ha between Brotherson Dock and the airport at Port Botany will provide the base for an economical and environmentally sustainable port expansion to service Sydney.

The project will involve the preparation of an EIS for the reclamation of land for port purposes and related construction works. The project includes:

- Reclamation of land in Botany Bay;
- Dredging to create deep water for the dock and to improve the shipping channel and turning basin for ships;
- Creation of additional berths;
- Filling of the reclaimed area and preparation of the site for long term port use;
- Enhancement of internal port traffic arrangements; and
- Improvement of port access by road and rail.

Subject to gaining planning consent from the Minister for Planning NSW and approval of the Government to proceed, the work will involve the subsequent development of port infrastructure. This may be undertaken by Sydney Ports, the private sector, a public/private partnership, or by other means and options.

NEED FOR THE PROJECT

More than 98% of Australia's trade is transported by sea. Trade through Sydney's ports, the primary port for import and export of containerised cargo in NSW, represents 57% of NSW's total international trade, and 20% of Australia's total international trade. Industry forecasts predict that growth in demand for container borne products will mean that the capacity of existing facilities at Port Botany may be reached by the end of the decade.

As an island nation, Australia relies on its ports for the import and export of cargo. This reliance is fundamental to both the nation's and the State's economies. As such, Sydney Ports must ensure the port continues to have the capacity to remain world competitive and to meet the expected growth in container trade through Sydney.

In selecting the proposed site for the port infrastructure, Sydney Ports has addressed the relative merits of the facilities within both Sydney Harbour as well as Port Botany. The facilities at Sydney Harbour are primarily used to handle non-containerised cargo and as demand for this cargo is also expected to grow. The problem is there is no additional space available.

The area between Brotherson Dock and the Parallel Runway provides a 'natural' extension to Brotherson Dock, and has a ready dredged channel and minimises any restrictions on the use of Botany Bay by commercial shipping and recreational craft.

BENEFITS

Sydney was established as a port city and the development of this project will allow NSW exports and imports to continue to expand, creating more than 6,000 new jobs by 2025. The resulting improved competitiveness will stimulate investment, output and employment.

The project if approved will position NSW to meet growing container trade and support the competitiveness and growth of manufacturing, distribution and other industries in Western Sydney which rely on containerised imports and exports.

The improvement in the efficiency of the container transport chain, offered by the development of additional container facilities at Port Botany and an intermodal terminal at Enfield, will minimise congestion at Port Botany.

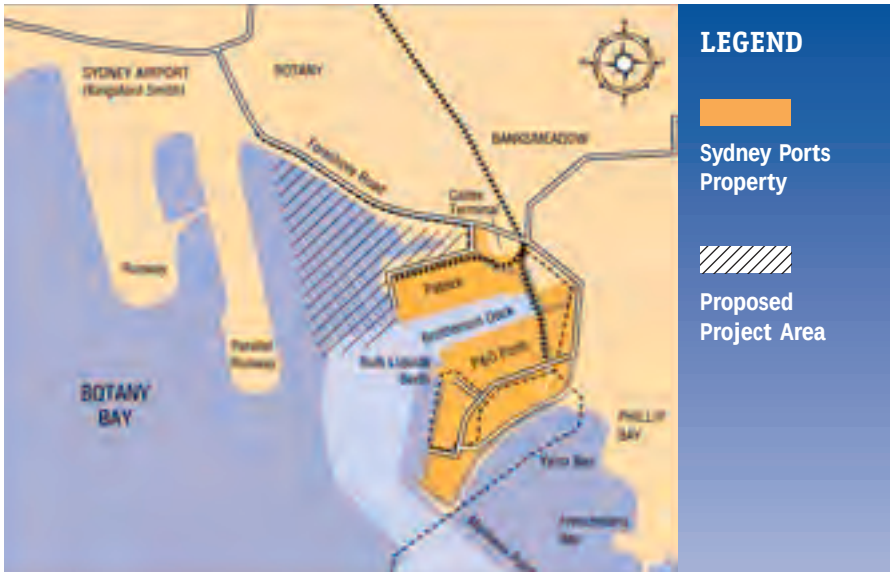
The resulting improved competitiveness will stimulate investment, output and employment and control transport costs.

INVITATION TO PARTICIPATE

A key part of the EIS is to allow the community and interest groups the opportunity to participate in the process.

The EIS study team is seeking input from interested groups and individuals during the preparation of the EIS, to ensure that the EIS deals with the matters you want to see addressed.

There are a number of ways you can have your say or bring issues to the attention of the study team.



Record your interest on the Contact Register

Interested individuals and organisations are invited to be listed on the Contact Register to receive copies of newsletters and other information distributed about the EIS and the project.

Comments you wish to make are welcome and may be provided as a written submission, by telephone, or by email.

Write a submission

Written submissions are invited from individuals, industry, community groups, and special interest groups. Submissions can be posted to:

URS

Port Botany Expansion EIS
URS Australia Pty Ltd
116 Miller Street North Sydney, NSW 2060 or faxed to us with attention to: Port Botany Expansion EIS on (02) 8925 5555.

Telephone the study team

You may wish to speak with a team member to register your interest by leaving your name and contact details (telephone number and address) on the information line (02) 8925 5543. Messages may be left on this number 24 hours a day, 7 days a week, and a member of our study team will ring you back.

Email us

You can email the project team on: port_botany@urscorp.com.

Newsletters as they become available, will be posted on the website which is: www.sydneyports.com.au.

SYDNEY PORTS

newsletter

PROPOSED PORT BOTANY EXPANSION | JUNE 2002 • NUMBER 2

Introduction

The first newsletter on the proposed Port Botany expansion provided you with background information. This newsletter provides you with information on:

- the commencement of an Environmental Impact Statement (EIS), its process and preparation;
- some of the studies being undertaken as part of the EIS; and
- how you can participate.

WHY THE COMMENCEMENT OF AN EIS IS RELEVANT TO YOU:

Sydney Ports Corporation wants to ensure the proposal to expand port facilities at Port Botany is environmentally, socially, and economically sustainable, impacts are minimised and managed, but positive impacts enhanced as much a possible. We will be talking with the community and other interest groups to provide information and to gather issues and concerns in relation to the proposal. Community interest in the proposal is encouraged and welcomed.

WHAT IS AN EIS?

An EIS presents an objective assessment of a proposal and its alternatives by undertaking investigations and specialist studies. It provides detail to enable an informed decision by the NSW Minister for Planning on the proposed project's progression.

URS Australia Pty Ltd (URS), has been commissioned by Sydney Ports to prepare the EIS for the proposal.

Manidis Roberts are assisting with the consultative activities associated with the EIS and undertaking a Social Impact Assessment.

The options to manage these issues, such as relocation of the boat ramp are being carefully considered.

Unloading container vessel at Port Botany.

WHAT IS THE APPROVAL PROCESS?

The proposal to expand Port Botany facilities requires consent from both State and Federal Governments (State Planning Minister and Federal Environment Minister), following extensive consultation. The EIS is being prepared so it addresses issues raised by the community, local councils, other government agencies and stakeholders, and can be assessed by the approving bodies.

EIS STUDIES

A complex range of studies will be undertaken including the assessment of social and environmental impacts. The studies are drawn together to form the EIS.

The EIS will assess the cumulative impact of the proposal and proposes mitigation measures to minimise any adverse impacts and enhance positive impacts.

Some studies have been commissioned (Table 1) with further studies to be commissioned and scoped.

During data collection over the next few months you may see traffic, noise, air quality, or marine specialists undertaking field investigations in the area. The presence of specialists around the proposed site does not signal the commencement of development, but is part of the process of gathering information in addition to community consultation.

Consultants commissioned to undertake the field studies have the expertise to address issues raised by government agencies and the community.

Other studies yet to be commissioned include traffic (a regional study), heritage and visual amenity. As studies are commissioned they will be incorporated into future newsletters.

Table 1: Some studies commissioned to date include:

Study	Consultants	Examples of items to be addressed (not comprehensive) include:
Marine & Coastal Processes	Lawson & Treloar	• impact assessment on the hydrodynamics of Botany Bay pre & post proposed development, looking at for example wave climate, tidal current & flushing, water quality, sediment movement, & flooding.
Groundwater	University of Technology, National Centre for Groundwater Management	• development of a whole-of-basin ground water model to assess groundwater outflow to Botany Bay.
Marine Ecology	The Ecology Lab	• impact assessment on aquatic environment including loss, addition or alteration of habitat (eg seagrasses), threatened species, potential for introduction of exotic species. • provision of management & monitoring measures.
Noise	Wilkinson Murray	• impact assessment on surrounding community during both the construction & operational phase of the project. The assessment will incorporate onsite impacts, traffic on roads & rail transport & cumulative impacts of the proposal with other noise/vibration sources, eg airport.
Air Quality	Sinclair Knight Merz	• assessment of vehicle, ship & dust emission impacts during construction & operation.
Social Impact Assessment	Manidis Roberts	• assessment of the impacts that may occur as a result of the proposal on existing social & community structures. • development of a masterplan addressing community infrastructure issues, incorporating community values & priorities.

CONSULTATION ACTIVITIES & OPPORTUNITIES TO PARTICIPATE

Some consultation has been occurring. A number of further community consultation activities are being planned to help keep you informed, provide you with the opportunity to become involved and encourage two-way exchange of information. Consultation activities will include:

- newsletters;
- community briefings;
- focus groups; and
- phone line, email address and web site.

The views and opinions of the local community and other stakeholders will be documented throughout the EIS process.

We welcome your involvement and comments on the proposed Port Botany expansion.

How to get involved

The EIS team is keen to hear your comments, views and issues so we can take them into account while its is still early in the EIS preparation and process.

To find out more or make a submission you can:


call our telephone information line on (02) 8925 5543 to ask for information or record your comments and suggestions or to be registered on our mailing list.


look up the proposed Port Botany expansion web site at www.sydneyports.com.au


send the EIS team an email on port_botany@urscorp.com


fax your comments marked "Port Botany EIS" to URS on (02) 8925 5555


post written submissions to:

"Proposed Port Botany Expansion EIS"
URS Australia Pty Ltd
Level 3, 116 Miller Street
North Sydney, NSW 2060.

If you require further interpretation of this newsletter please ring the project information line leaving your name and number and a team member will contact you and provide assistance.

URS

SYDNEY PORTS

newsletter

PROPOSED PORT BOTANY EXPANSION | OCTOBER 2002 • NUMBER 3

Introduction

This is the third issue of a series of community newsletters to provide information on the proposed Port Botany expansion. The first newsletter introduced the proposal, broadly identified the need and benefits of the proposal, and outlined ways to participate in the process. The second newsletter advised of the commencement of the Environmental Impact Statement (EIS) and provided information on its process, preparation and ways for you to participate. This newsletter provides an update on the proposal, reports on progress of the EIS studies and stakeholder consultation, and seeks your input for the open space areas and EIS preparation.

NEW PROPOSED CONCEPT LAYOUT

A project 'envelope' area was identified at the time of announcement of the proposed expansion. To-date, feedback from stakeholders has included, for example, the potential impact on shore-birds habitat, potential loss of seagrass, potential loss of Foreshore Beach, access to the boat ramp, alternative port sites, traffic, noise and bay hydrodynamic impacts, and the potential disturbance to the contaminated sediments within the Penrhyn Estuary.

This feedback, taking into account port operational needs, has assisted with progressing from the 'envelope' to the development of a concept layout for the proposed Port Botany expansion. Refer to **Figure 1**. The proposed layout is more detailed and addresses specific project requirements. It includes a revised area of reclamation and an operational layout that minimises the potential loss of beach area and manages the bird habitat in Penrhyn Estuary.

Ideas are currently being sought for the recreation and water management / ecological areas, refer to **Figure 1**. By completing and returning the reply-paid comment postcard (see below), you can help ensure the recreation and water management / ecological areas reflect community needs and expectations where possible. Your ideas will help guide the final outcome. Some of the ideas already expressed for the recreation and water management/ecological areas include a link between Sir Joseph Banks Park and Foreshore Beach, bike trail and pedestrian pathways, boardwalks, retention of length of beach, habitat identification and protection, viewing platforms, boat ramp facilities, arts projects to reflect local history, landscape improvements, litter management, barbecue facilities and amenities.

FIGURE 1 *New concept layout for proposed Port Botany expansion*

PLANNING FRAMEWORK FOR BOTANY BAY

In September 2002, PlanningNSW announced it is developing an integrated planning assessment framework for Botany Bay.

The proposed Port Botany expansion EIS would be assessed and guided by this new planning framework.

PLEASE GIVE US YOUR FEEDBACK

My ideas/comments on the recreation area are: _____

_____

_____

My ideas/comments on the water management/ecological area are: _____

_____

_____

Any other comments? _____

_____

Name _____

Address _____

Email _____

Thanks for your feedback.

Should you wish to provide further comments or seek additional information please see overleaf 'How to get involved?'

EIS INVESTIGATIONS ARE PROGRESSING

Sydney Ports Corporation have commissioned more than 30 specialist studies to investigate and assess the potential impacts, mitigation and enhancement opportunities of the proposed port expansion. Stakeholder feedback has been and will continue to be forwarded to the project team and relevant specialists for consideration and inclusion in the EIS.

The following studies have commenced since the distribution of the second newsletter:

Study	Consultants	Nature of study
Visual impact assessment	Architectus/Timothy Williams & Associates / Landarc	• assessment of the visual form of the proposed terminal • recommendations for management of visual impacts and landscape requirements
Public open space planning	Manidis Roberts	• development and assessment of options for the public open space areas around the port
Ecotoxicology & Human Health	URS	• assessment of potential impacts on human health and ecology associated with possible disturbance of existing contaminated sediments, groundwater and stormwater pollutants etc
Preliminary Hazard Analysis	Det Norske Veritas	• assessment of potential risks and hazards that may arise from port operations in relation to the handling and transport of dangerous goods • recommendations for risk minimisation including appropriate emergency and incident management plans
Terrestrial Ecology	URS	• assessment of potential impacts on land based flora and fauna including wader birds within Penrhyn Estuary • provision of management and monitoring measures
Heritage	Navin Officer of cultural heritage	• impact assessment on any aboriginal, non-aboriginal and maritime aspect

Sydney Ports anticipates investigations and preparation of the EIS will be completed by mid 2003.

CONSULTATION IS PROGRESSING

Over the past few months, Sydney Ports has heard from a number of local and other stakeholders via public response mechanisms (phone, fax, email, post), focus group sessions and stakeholder briefings. Sydney Ports and its project team will continue to listen and learn from stakeholders throughout the preparation of the EIS. There will also be further opportunities to provide comments when the completed EIS is placed on public display by PlanningNSW.

Planned consultation activities to occur over the next few months include:

- open space planning workshops with local and state government stakeholders;
- community information displays at Foreshore Beach, Penrhyn Road boat ramp car park, and Botany shopping centre;
- stakeholder briefings;
- public response mechanisms; and
- newsletters.

MANIDIS ROBERTS
environment + community

How to get involved?

Sydney Ports is keen to hear from you. To find out more information or make a submission on the proposal you can:

call our freecall information line on 1800 136 136;

look at our website at www.sydneyports.com.au;

send us an email on portbotany@manidisroberts.com.au;

fax us on (02) 9281 9406;

post us at:
'Proposed Port Botany Expansion EIS'
Reply Paid 75685
SURRY HILLS NSW 2010

If you require further interpretation of this newsletter, please contact the above freecall information line and a team member will provide assistance.

Delivery Address:
Suite 401, Level 4
23-33 Mary Street
SURRY HILLS NSW 2010

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SYDNEY PORTS

newsletter

PROPOSED PORT BOTANY EXPANSION | APRIL 2003 • NUMBER 4

Introduction

This is the fourth in a series of newsletters on the proposed Port Botany expansion. It provides information on the public open space design of Foreshore Beach and Penrhyn Estuary, an update on the preparation of the Environmental Impact Statement (EIS), and information about the Patrick's EIS and the proposed Enfield Intermodal Terminal.

PUBLIC OPEN SPACE DESIGN

The proposed design for the public open space areas of Foreshore Beach and Penrhyn Estuary is shown overleaf. A strong feature of the design is its nature emphasis. This reflects the high values placed on the ecological features of the Penrhyn Estuary and the recreational area of Foreshore Beach by the community and local and state government representatives.

Specialist studies have confirmed that Penrhyn Estuary is an important habitat for shorebirds. The proposed design would expand the existing habitat for shorebirds, providing additional tidal flats for feeding and additional salt marsh for roosting, with the potential to increase the numbers of birds using the area. It would also enhance the existing seagrass habitat. Public access to Penrhyn Estuary would be restricted to achieve the desired conservation outcomes.

Foreshore Beach uses would be retained, with a passive recreational focus. Pedestrian and cycle access through the area would be enhanced with the provision of a shared pathway along the length of the beach and estuary, with the opportunity to link with other pathway networks. A pedestrian and cycle overpass and a signalised pedestrian crossing would connect the area to Sir Joseph Banks Park and improve access.

The existing boat ramp would be replaced by a modern facility with public amenities and parking.

The proposed design incorporates feedback from the community, including many ideas for the public open space areas. Local and state government stakeholders worked with Sydney Ports and external specialists to evaluate a wide range of options and develop the proposed design.

EIS IS PROGRESSING

The EIS is progressing and Sydney Ports anticipates that it will be on public exhibition in mid 2003. Specialist investigations have been undertaken over the last 18 months, including social, environmental and economic investigations. Specialists have looked at national and international examples of best practice when undertaking their studies to ensure that the EIS will provide an optimal solution for NSW's container trade needs and will meet the high standards required by NSW's environmental legislation.

OTHER PORT DEVELOPMENTS

The EIS for Patrick's proposal to upgrade their existing operations and expand their facilities by 2.5 hectares has recently been exhibited. Sydney Ports supports the proposal's objective to increase terminal efficiency and capacity.

The recent independent review of Sydney Ports proposed Enfield Intermodal Terminal by The Hon Milton Morris reinforced the need for a network of intermodal terminals to support trade growth and encourage the movement of containers by rail. Sydney Ports strongly supports this principle and has a role in ensuring more containers are moved by rail. Sydney Ports welcomes the Government's new target of achieving 50 per cent of container movements by rail.

The objective of the proposed Port Botany expansion is to provide additional port-land and berth capacity to meet future trade growth in the Sydney basin and NSW overall. This requirement is in addition to Patrick's proposal to increase their terminal capacity and is complementary to the objective of increasing rail's market share for moving containers.

HOW TO GET INVOLVED

Sydney Ports has been receiving inquires and submissions from the community throughout the preparation of the EIS. To contact us:

call our freecall information line on 1800 136 136;

look at our website at www.sydneyports.com.au;

send us an email on portbotany@manidisroberts.com.au;

fax us on (02) 9281 9406;

post us at:
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If you require further interpretation of this newsletter, please contact the above freecall information line and a team member will provide assistance.

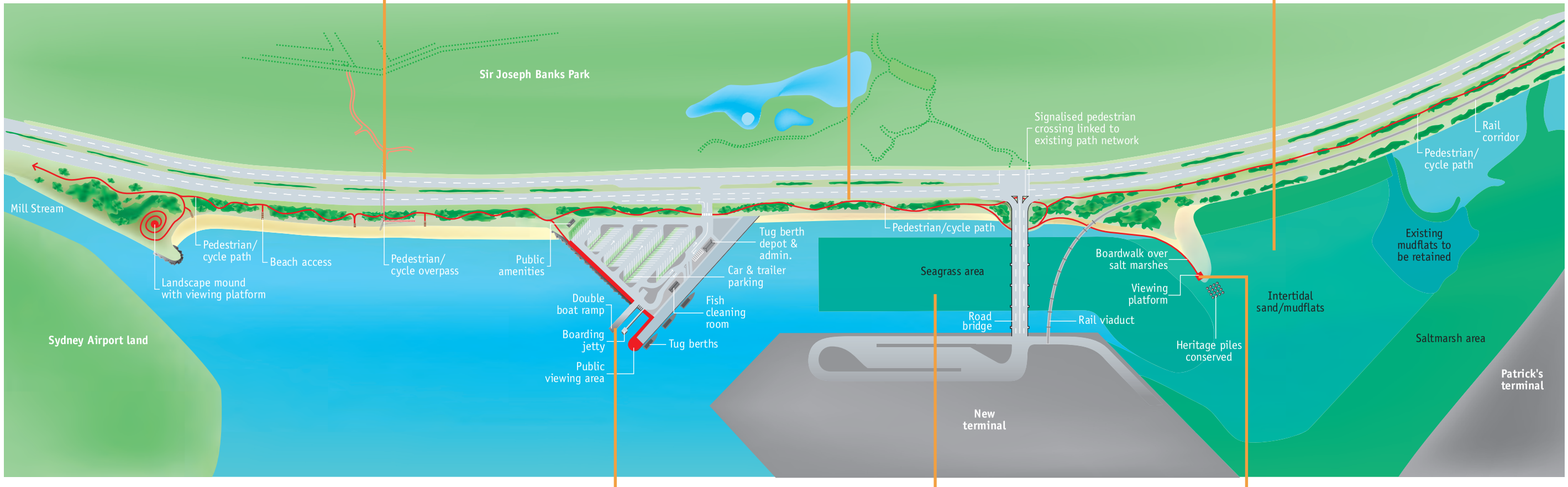
PUBLIC OPEN SPACE DESIGN

The proposed design for the public open space areas of Foreshore Beach and Penrhyn Estuary would retain and enhance the uses of the beach, provide improved recreation amenities and enhance the ecological habitat of Penrhyn Estuary. This image is a graphic representation of the design. The design would incorporate the following features:

A pedestrian/cycle overpass linking Foreshore Beach with Sir Joseph Banks Park. The overpass would link the pedestrian/cycle path with the existing paths in the park and provide safer access with a more convenient point for crossing Foreshore Drive.

Creation of a pedestrian/cycle path extending the full length of Foreshore Beach and Penrhyn Estuary, accessible to pedestrians and cyclists.

Enhancement of the existing shorebird habitat in Penrhyn Estuary by creating additional tidal flats for feeding and additional saltmarsh for roosting.



New double lane boat ramp and carpark. This would replace the existing facility in Penrhyn Estuary. A boarding jetty, enclosed fish cleaning facility and public amenities would also be provided.

Enhancement of the existing seagrass habitat in Penrhyn Estuary.

A boardwalk and viewing platform extending a short distance into the Estuary to allow the public to view the ecological habitat without impacting on the environment.

D Appendix

ADVERTORIALS

Introducing Sydney Ports Sydney Ports Corporation is the port authority managing the ports of Sydney and Botany.

Sydney Ports Community Program

Sydney Ports is a major sponsor of the popular Festival of the Sails at Botany Bay National Park South on 26 and 27 April 2003. Entertainment at Botany Bay National Park South includes an Irish band showcasing the best of that country's music and a bush band with a distinctly Australian flavour. Everyone is looked after with a choice of art, craft and food stalls. Another highlight for those with an artistic bent is the Art Show featuring local artists and art and craft demonstrations at Marton Park.

Sydney Ports is sponsoring the ferry service between Kurnell and La Perouse which will disembark passengers within walking distance of the Festival and its events. The ferry will run to a half hourly timetable during the two days with a running commentary on sites of interest on its journey between Kurnell and La Perouse.

This is the first time Sydney Ports has sponsored the Festival of the Sails and we wish everyone a very enjoyable weekend at the Festival.

Trade

Despite January and February traditionally known as slow months for container trade, trade through Sydney's ports for the eight month period to February 2003 was 8.1% higher than the corresponding period last year with growth in both the containerised and non-containerised trade sectors.

Whilst exports remain affected by the weakness of overseas economies, the stronger Australian dollar and the continued effect of the drought, these same factors have increased the level of imports.

The major exports include non ferrous metals ie aluminium, chemicals, iron and steel, cotton and meat.

Port Botany update

The proposed Port Botany expansion Newsletter No.4, has recently been distributed to 16,000 homes and businesses in the Botany area. The newsletter presents the proposed design for the public recreational and environmental areas along Foreshore Beach and the Penrhyn Estuary, and provides an update on the Environmental Impact Statement (EIS).

This design is based on input from Sydney Ports' consultation with stakeholders and community feedback. It entails significant enhancements which will upgrade the existing foreshore beach areas to create valuable environmental and public recreational facilities.

Some of the key features of the design include:

- A strong nature emphasis. This reflects the high values placed on the ecological features of Penrhyn Estuary and the open space of Foreshore Beach by the community, and local and state government representatives.
- Expansion of the existing habitat for shorebirds. The design would provide tidal flats for feeding, a salt marsh for roosting and additional seagrass meadows, with the potential to increase the number of migratory birds.
- Retention of Foreshore Beach uses with a passive recreational focus.
- Enhanced pedestrian and cycle access. This would include a shared pathway for pedestrians and cyclists along the length of the beach and estuary. As there are currently no links across Foreshore Road, between Sir Joseph Banks Park and the beach, the design provides for two separate crossings - a pedestrian overpass and a signalised crossing.

The EIS preparation is nearing completion and it is anticipated it will be lodged mid this year for public exhibition, consideration and comment. The EIS will present the proposal; methodology of investigations undertaken; identify impacts, mitigation measures and enhancement opportunities; and address those issues raised during the preparation of the EIS by the community and other stakeholders.

The EIS for Patrick's proposal to upgrade their existing operations and expand their facilities by 2.5 hectares has recently been exhibited. Sydney Ports supports the proposal's objective to increase terminal efficiency and capacity.

The recent independent review of Sydney Ports proposed Enfield Intermodal Terminal by The Hon Milton Morris AO reinforced there was a need for a network of intermodal terminals to support the growth of containers moved by rail. Sydney Ports strongly supports this principle as this will enable more containers to be taken off the road. Sydney Ports believes further consideration should also be given to the Enfield site's potential in forming part of this network in some capacity.

Sydney Ports has a role in ensuring more containers (currently 25%) are moved by rail and welcomes the Government's new target of achieving 50% of container movements by rail in the medium term.

The objective of the proposed Port Botany Expansion is to provide additional port-land and berths to meet future trade growth in the Sydney basin and NSW generally. This requirement is in addition to Patrick's proposal to increase their terminal capacity and complementary to the objective of increasing rail's market share for moving containers.

To provide comment or feedback on the proposed Port Botany Expansion, stakeholders can:

- call the project information line on Freecall 1800 136 136
- e-mail the project team on portbotany@manidisroberts.com.au
- fax on (02) 9281 9406
- look at our website at www.sydneyports.com.au
- write to the project team at (no postage required):
  'Proposed Port Botany Expansion EIS', Reply Paid 75685,
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Introducing Sydney Ports

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Sydney Ports Community Program

The Festival of the Sails organized by the Sutherland Shire Tourism and the Kurnell Progress and Precinct Residents' Association was held on 26 and 27 April at Botany Bay National Park.

It is estimated the Festival was attended by 10,000 people over the two day period. Sydney Ports was the sponsor of the ferry service between Kurnell and La Perouse which disembarked passengers close to Festival activities. The ferry proved to be a popular means of transport with an estimated 2,500 patrons using the service over the weekend.

As a first time sponsor of the Festival, Sydney Ports was pleased to be involved with such a successful community event.

Security in the Port

The port facilities of Sydney and Botany generally have a high level of security. This needs to be the case to address security issues such as theft or illegal imports. In light of recent world events, government, government agencies and port users are examining the upgrading of security measures to comply with current international requirements and planned legislation.

Consistent with the International Maritime Organisation's International Ship and Port Security Code and Commonwealth Government requirements, Sydney Ports has put in place action plans of its own relating to port security.

Additionally, the NSW State Government has formed a Critical Infrastructure Review Group, which amongst other responsibilities has identified critical assets, including port facilities, and has developed strategies to minimise the effects of any incident to ensure the continuity of essential services.

Sydney Ports is actively involved in a number of forums dealing with security management (at State, Federal and port precinct levels) and chairs a Port Security Committee which oversees the implementation of security measures in the ports.

Trade through Sydney's ports

Total container throughput at 974,216 twenty foot equivalent units for the ten-month period to April 2003 was 15.5% higher than last year, with total container imports up by 13.3%. The export of full containers has been similar to last year's volumes, but empty container exports have increased reflecting the increasing import/export imbalance.

Based on previous figures which demonstrate a steady increase in trade, it is anticipated trade throughput will easily exceed the 1.1 million TEU mark by the end of the financial year. The one million teu's per year threshold through the ports of Sydney was first recorded in 1999/2000 and, indicative of a relatively strong domestic economy, levels of trade, particularly imports, continue to rise.

Sydney ports' top three trading partners continue to be China, New Zealand and the United States.

The top ten major exports include non ferrous metals, chemicals, iron and steel, meat and cotton and paper products.

Draft Proposed Port Botany Expansion Update

The current strong growth in container trade, forecast to triple over the next 20 to 25 years, reinforces the need for Sydney Ports Corporation to continue planning for the proposed Port Botany Expansion project.

Most large infrastructure facilities have some impacts during construction and operation and Sydney Ports acknowledge the proposed Port Botany Expansion project will be no exception. However, Sydney Ports has been working with stakeholders to identify and propose measures to mitigate and manage the impacts.

The proposal also provides opportunities for local improvements to recreational and environmental areas of the Penrhyn Estuary and the Foreshore Beach corridor. There are also broader economic and employment benefits that would be generated by the proposed expansion (7,000 additional jobs and a boost of more than $1billion to the NSW economy by 2025).

In a continuation of the consultation program, a series of focus groups and briefings have been held with a variety of stakeholders over the past month. Stakeholders consulted include industry, councils, local community representatives and recreational users such as fisherman, boat owners, dog walkers, and windsurfers. All consultations included discussions on the concept design of the proposed terminal and its broader impacts. The focus groups also discussed the impacts likely to occur in relation to their specific interests and recreational activities.

Important questions raised included issues such as: the management and maintenance of the new proposed facilities; the input by fisherman and boat ramp users into the design of the new boat ramp; trucks using Botany Road; and safety issues near Foreshore beach.

Answers to these questions and many others were provided during the consultation sessions and will be canvassed in the EIS. Maintenance of the Beach and Estuary area was identified as a significant issue and this will be addressed by the implementation of a management plan, which identifies responsibilities and service levels. Truck access to the new terminal will be directly on and off Foreshore Road. A recent Roads and Traffic Authority survey found that approximately 4% of the traffic on Botany Road was port related trucks. Sydney Ports and RTA are working together to discourage the inappropriate use of Botany Road by trucks that do not need to access the industrial areas adjoining this Road.

Safety will also be addressed by incorporating components such as low level vegetation, particularly around the proposed car park area, a 24 hour tug operation located near the car park and improved lighting. Users will be consulted in the detailed design of the new boat ramp to ensure that an optimum facility is developed.

The EIS will be lodged by mid year and will contain the independent studies which have guided the development of the proposed concept.

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Award Winner

Sydney Ports was a winner of the City of Botany's Business Excellence Awards in the Industrial/Port Related category, held in October 2002.

Sydney Ports' winning submission was based on its $6 million port improvement program, including new directional signage to assist users of the port, upgrades to Bumbora Point Road and Friendship Road as the major port access routes, and improved landscaping.

A final addition to the signage program is a very prominent sign on the corner of Botany Road and Beauchamp Road indicating the location of Port Botany.

Port Botany is one of the most significant maritime trade links in Australia and handles over 57% of NSW's cargo, worth some $30 billion each year.

Shipping News

During the financial year, 2,259 ships visited the ports of Sydney Harbour and Botany Bay.

With a focus on prevention, Sydney Ports undertook almost 3,000 audits of bulk liquids transfer operations and approximately 1,225 audits of bunker operations of commercial shipping.

During the reporting year, there were 229 reports of marine pollution, 110 reports less than the previous year, with all reports promptly investigated. Of the 229 reports only seven (3%) were sourced from commercial shipping operations, with the vast majority (97%) originating from land-based or non-commercial sources.

Sydney Ports has invested some $10 million in assets for dealing with oil spills to maintain the largest stockpile of emergency response equipment of any port in Australia. It also spends around $11 million per annum on wages and materials to manage the day to day emergency response operations in Sydney Harbour and Port Botany.

First Port Future Port

Sydney Ports has recently released a book called "First Port Future Port" – Celebrating 100 years of the public management of the Port of Sydney.

The Book, published by Sydney Ports, offers a glance back through 100 years of the evolution of the ports. It is available by logging onto the Sydney Ports website, www.sydneyports.com.au and choosing Media Room and Publications.

Sydney Ports Community Program

Sydney Ports announced in September its sponsorship of the "Sydney Ports 2003 NSW State Sabot Championship" and the 2003 Navigators Cup.

These events will be held in January in Yarra Bay and Botany Bay respectively and they both promise to be great community events attended by the local sailing fraternity.

Sydney Ports wishes you and your families a very safe and happy Christmas and New Year.

Proposed Port Botany Expansion Update

Feedback from the Proposal's latest newsletter has generated new ideas for the proposed concept layout.

The third newsletter, providing an update on the Environmental Impact Statement (EIS) preparation, has been letterboxed to approximately 16,000 homes and businesses in and around Port Botany. Another 3,000 newsletters were provided to local councils and libraries.

The newsletter outlined further environmental and technical studies that have commenced as part of the EIS.

Stakeholders were invited to make comments or present ideas on the amended proposed concept layout, and recreational and environmental areas.

In addition to feedback from community and stakeholders with regard to a new boat ramp, and a connection between Foreshore Beach and Sir Joseph Banks Park, new ideas for the proposed concept included: consideration of a swimming pool, marina facilities, a shark net for part of Foreshore Beach, cycling facilities, restricted human access to Penrhyn Estuary bird habitat and provision of disabled access to the beach.

Other feedback included requests for cessation of the preparation of the EIS, consideration of alternative sites, traffic and dredging implications.

Sydney Ports has confirmed in consultations and briefings that issues raised by the community will be addressed by the environmental and technical studies currently being undertaken and will be incorporated into the EIS.

When the EIS has been completed, that is when the studies and stakeholder feedback have been integrated, it will be placed on public exhibition by PlanningNSW. The public exhibition period allows for informed discussion of the Proposal's environmental impacts and mitigation measures. PlanningNSW will undertake an independent assessment of the proposal, and then determine whether the proposal may or may not proceed, or if it requires modifications.

It is anticipated the EIS will be completed and lodged with PlanningNSW in mid 2003.

If you would like to register your interest, present ideas or raise concerns, please either:

- call the project information line on Freecall 1800 136 136
- e-mail the project team on portbotany@manidisroberts.com.au
- fax (02) 9281 9406
- look at our website at www.sydneyports.com.au
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Protecting the Ports of Sydney and Botany from Oil Spills

In September, Sydney was host to Spillcon, an international conference showcasing Sydney Ports' prevention and control of oil spills, with the focus on protecting Australia's waters.

Sydney Ports played an active role during the conference, including an emergency response exercise on Sydney Harbour that demonstrated Sydney Ports' expertise and experience in the containment of oil spills and other shipping related incidents.

Sydney Ports invests $11 million per annum on prevention measures and preparedness including regular training exercises and maintaining the largest stockpile of emergency response equipment of any port in the country.

The Shipping News

Vessel visits have increased during the first two months of 2002/2003 totalling 191 visits to Botany and 196 vessel visits to Sydney and bringing in an increased number of products including paper products and machinery.

Exports have decreased due to the wide ranging drought and a stronger Australian dollar, however, exports to the United States have increased by 4% during the first two months of 2002/03, including increasingly large volumes of wine being exported through Sydney to the United States and Canada.

Proposed Port Botany Expansion Update

Since commencing consultation and preparation of an Environmental Impact Statement (EIS) earlier this year, Sydney Ports has been guided by stakeholder feedback and has continued to undertake technical investigations.

Examples of stakeholder feedback include: the potential impact on the shorebirds habitat, potential loss of seagrass, potential loss of Foreshore Beach, access to the boat ramp, alternative port sites, traffic, noise and bay hydrodynamic impacts, and potential disturbance to the contaminated sediments within the Penrhyn Estuary.This feedback has led to the development of a concept layout incorporating conservation of the Penrhyn Estuary, a revised area of reclamation and an operational layout that minimises the potential loss of beach area. The proposed concept layout can be viewed or obtained from the details provided below.

Some of the ideas already expressed by stakeholders for the recreation and water management/ecological areas in the concept layout include: a link between Sir Joseph Banks Park and Foreshore Beach, bike trail and pedestrian pathways, boardwalks, retention of beach, bird habitat, viewing platforms, boat ramp facilities, art projects to reflect local history, landscape improvements, litter management, barbecue facilities and amenities. Your ideas for the recreation and water management/ecological areas are welcomed via the public response mechanisms listed below and will be considered in the further development of the proposed concept layout.

Environmental investigations and community consultation activities on the proposed Port Botany Expansion are progressing. More than 30 specialist studies are underway to investigate and assess the potential impacts, mitigation measures and enhancement opportunities of the proposal.

To register your interest, present ideas or raise concerns, please either:

call the project information line on Freecall 1800 136 136 • e-mail the project team on portbotany@manidisroberts.com.au • fax (02) 9281 9406 • look at our website at www.sydneyports.com.au • write to the project team at (no postage required): 'Proposed Port Botany Expansion EIS', Reply Paid 75685, SURRY HILLS NSW 2010.

Information and previous newsletters can also be found on the Sydney Ports website.

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Update on Port Botany Improvement Program

During July Sydney Ports officially reopened the upgraded Bumbora Point Road, Port Botany. Bumbora Point Road is one of the main access routes to the port including Friendship Road and Botany Road. Bumbora Point Road is also a public road, frequented by buses, private vehicles and port traffic.

Randwick Council, as the authority responsible for the road, and Sydney Ports were partners on the project. Together, they invested over $3.7 million in the upgrade and managed the program for the roadworks. These works have enabled the Roads and Traffic Authority to accept the road as a State Road, and with that, the responsibility for future maintenance of the road.

Sydney Ports' improvements have resulted in a wider road, with turning and parking lanes. This will result in the improvement of traffic flow on the road and to and from port facilities. Ongoing management by the Roads and Traffic Authority means all the access roads to the port are now under the responsibility and management of one Authority.

Sydney Ports Community Program

Sydney Ports liaises with the Port Botany community through a number of Community Groups, including the Botany Bay Coastal Management Committee.

This Committee, chaired by Sydney Ports, includes community representatives, local government and other government agencies with an interest in the protection and care of the foreshores of the Bay.

Sydney Ports coastal marine officers have commenced their annual beach profiling of the Port Botany area, involving the measuring of sand levels.

This work, which has been undertaken for more than 30 years, is part of providing expert advice and solutions on coastal and marine environment issues to other agencies and stakeholders. Each year, more than 30 hydrographic surveys are conducted.

Shipping News

During July, the "P&O Nedlloyd Botany", one of the world's largest reefer container ships, visited Port Botany on its maiden voyage and Sydney Harbour, where she was officially christened.

Proposed Port Botany Expansion

An important aspect of the Environmental Impact Statement (EIS) preparation for Sydney Ports Corporation's proposed expansion of facilities at Port Botany is to facilitate consultation with the community and other stakeholders.

The consultation program is at an early stage and is currently focussed on listening to stakeholders and gathering their concerns. The issues and concerns raised will assist Sydney Ports to design and prepare a layout for its proposal which better meets the needs of stakeholders.

A number of environmental studies designed to comprehensively assess the potential impacts of the proposal have commenced but are also at an early stage. It will be some time before these studies are finalised and the analysis completed. The results of this work will also feed into the design and proposed layout. The preparation of the EIS is a complex and lengthy process. Sydney Ports aims to ensure the project proposal is environmentally, economically and socially sustainable.

Sydney Ports proposes to continue listening to community concerns over the following months, and when information from the studies and analysis is complete information will be fed back to stakeholders.

When the EIS is ready to be placed on public display, advertisements will be placed in newspapers indicating for the benefit of stakeholders where the EIS can be viewed or obtained, and inviting comments on the proposal.

Sydney Ports welcomes the involvement of the community who we encourage to register their interest in the proposed project and to make known issues and questions they would like addressed in the EIS.

You can register your interest with consultants Manidis Roberts who are assisting URS with the EIS by: calling the project information line on Freecall 1800 136 136; e-mailing the project team on portbotany@manidisroberts.com.au, faxing on 9281 9406 or, writing to the project team at (no postage required): 'Proposed Port Botany Expansion EIS', Reply Paid 75685, SURRY HILLS NSW 2010. Information can also be found on the Sydney Ports website www.sydneyports.com.au. Submissions made to URS contact details will continue to be incorporated into the EIS.

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Sydney Ports Corporation

Sydney Ports Corporation is the port authority managing the ports of Sydney Harbour and Botany Bay. Sydney Ports' key business responsibilities are port management and development, trade facilitation, navigational and operational safety needs and protection of the marine environment.

Update on Port Botany Improvement Program

Sydney Ports Corporation is finalising a $6 million improvement program for the existing Port Botany area including the upgrade of main access roads, improved signage and landscaping within the port.

Friendship Road, between Bumbora Point Road and Charlotte Road, has been resurfaced and upgraded at a cost of $1.6 m. Bumbora Point Road is nearing completion, and Sydney Ports' $3.0 m investment has resulted in a wider, re-surfaced road, with turning and parking lanes. This will result in the improvement of traffic flows and a safer road for road users and heavy vehicles. On completion Bumbora Point Road will be handed to RTA as a State Road and, as a result of the high level design standard, will require minimal future maintenance.

Directional signage has been erected to identify the boundary of the Port and the individual terminal operators, with the exception of one major sign destined for Beauchamp Road near the Port, for which a contract has recently been let.

The landscaping component of the program will commence on completion of signage and road upgrade works.

$6 million improvement program

New Port Botany Land Acquisition

Sydney Ports has also recently completed the purchase of some 13 hectares of land at Lot 103 Bumbora Point Road, formerly the Bunnerong Power Station site. An area of this land has been leased to the Australian Customs Service for a state-of-the-art container X-ray facility for the detection of illegal goods.

Sydney Ports Community Program

Sydney Ports continues its relationship with the local community. Through its membership of the Botany Bay Enterprise Centre, Sydney Ports is the sponsor of the BBEC Quarterly Dinner in July and the special guest speaker is Dr Karl Kruszelnicki.

In May Sydney Ports provided sponsorship of the Support Boat for the Kurnell Catamaran Club and continues to support the Australia Day Botany Bay Regatta, in which local sailing clubs compete.

Shipping News

The container vessel, Mette Maersk, owned by Maersk Sealand and one of the largest container vessels ever to visit Australia, berthed at Port Botany during March.

When fully loaded, the vessel carries 4300 containers and measures 294 metres in length overall and 32 metres across.

Port Botany, with its deep shipping channels, is one of the few ports in Australia that is able to receive vessels of this size fully loaded.

Proposed Port Expansion

Sydney Ports' proposed expansion plan for Port Botany includes additional infrastructure to meet the anticipated trade growth over the next 20 to 30 years, in line with consumer demand and a growing population.

The proposed solution to meet demand is to reclaim and develop an area of some 70ha of port land between Brotherson Dock and the airport. To fully assess the sustainability of this proposal, considering environmental, social and economic issues, an Environmental Impact Statement (EIS) is being prepared with the involvement of the local community, port users and service providers, and other interested stakeholders.

While the basic proposal is to develop 70ha of port land, the perimeter of the area will not be properly defined until community views and the result of specific scientific/technical studies can be taken into account in settling on a layout plan.

Sydney Ports would like your input and is currently undertaking a consultation program for the preparation of the EIS, which will include a Social Impact Assessment (SIA). As part of the program and SIA, the community are encouraged to register their interest in the project and to make known issues, comments and/or questions they would like addressed in the EIS. By registering, this will help ensure you receive background information on the proposed project, newsletters and future information updates about the proposal. Your details will remain confidential.

You can register your interest by: calling the project information line on 8925 5543 to record your details; e-mailing the project team on port_botany@urscorp.com or, writing to the project team at: Port Botany Expansion, URS Australia Pty Ltd, Level 3, 116 Miller Street, North Sydney, NSW 2060.

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Randwick Council, as the authority responsible for the road, and Sydney Ports were partners on the project. Together, they invested over $3.7 million in the upgrade and managed the program for the roadworks. These works have enabled the Roads and Traffic Authority to accept the road as a State Road, and with that, the responsibility for future maintenance of the road.

Sydney Ports' improvements have resulted in a wider road, with turning and parking lanes. This will result in the improvement of traffic flow on the road and to and from port facilities. Ongoing management by the Roads and Traffic Authority means all the access roads to the port are now under the responsibility and management of one Authority.

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Sydney Ports liaises with the Port Botany community through a number of Community Groups, including the Botany Bay Coastal Management Committee.

This Committee, chaired by Sydney Ports, includes community representatives, local government and other government agencies with an interest in the protection and care of the foreshores of the Bay.

Sydney Ports coastal marine officers have commenced their annual beach profiling of the Port Botany area, involving the measuring of sand levels.

This work, which has been undertaken for more than 30 years, is part of providing expert advice and solutions on coastal and marine environment issues to other agencies and stakeholders. Each year, more than 30 hydrographic surveys are conducted.

Shipping News

During July, the "P&O Nedlloyd Botany", one of the world's largest reefer container ships, visited Port Botany on its maiden voyage and Sydney Harbour, where she was officially christened.

Proposed Port Botany Expansion

An important aspect of the Environmental Impact Statement (EIS) preparation for Sydney Ports Corporation's proposed expansion of facilities at Port Botany is to facilitate consultation with the community and other stakeholders.

The consultation program is at an early stage and is currently focussed on listening to stakeholders and gathering their concerns. The issues and concerns raised will assist Sydney Ports to design and prepare a layout for its proposal which better meets the needs of stakeholders.

A number of environmental studies designed to comprehensively assess the potential impacts of the proposal have commenced but are also at an early stage. It will be some time before these studies are finalised and the analysis completed. The results of this work will also feed into the design and proposed layout. The preparation of the EIS is a complex and lengthy process. Sydney Ports aims to ensure the project proposal is environmentally, economically and socially sustainable.

Sydney Ports proposes to continue listening to community concerns over the following months, and when information from the studies and analysis is complete information will be fed back to stakeholders. When the EIS is ready to be placed on public display, advertisements will be placed in newspapers indicating for the benefit of stakeholders where the EIS can be viewed or obtained, and inviting comments on the proposal.

Sydney Ports welcomes the involvement of the community who we encourage to register their interest in the proposed project and to make known issues and questions they would like addressed in the EIS.

You can register your interest with consultants Manidis Roberts who are assisting URS with the EIS by: calling the project information line on Freecall 1800 136 136; e-mailing the project team on portbotany@manidisroberts.com.au, faxing on 9281 9406 or, writing to the project team at (no postage required): 'Proposed Port Botany Expansion EIS', Reply Paid 75685, SURRY HILLS NSW 2010. Information can also be found on the Sydney Ports website www.sydneyports.com.au. Submissions made to URS contact details will continue to be incorporated into the EIS.

First port... future port

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Introducing Sydney Ports

Sydney Ports Corporation is the port authority managing the ports of Sydney and Botany.

Sydney Ports Community Program

Sydney Ports is a major sponsor of the popular Festival of the Sails at Botany Bay National Park South on 26 and 27 April 2003. Entertainment at Botany Bay National Park South includes an Irish band showcasing the best of that country's music and a bush band with a distinctly Australian flavour. Everyone is looked after with a choice of art, craft and food stalls. Another highlight for those with an artistic bent is the Art Show featuring local artists and art and craft demonstrations at Marton Park.

Sydney Ports is sponsoring the ferry service between Kurnell and La Perouse which will disembark passengers within walking distance of the Festival and its events. The ferry will run to a half hourly timetable during the two days with a running commentary on sites of interest on its journey between Kurnell and La Perouse.

This is the first time Sydney Ports has sponsored the Festival of the Sails and we wish everyone a very enjoyable weekend at the Festival.

Trade

Despite January and February traditionally known as slow months for container trade, trade through Sydney's ports for the eight month period to February 2003 was 8.1% higher than the corresponding period last year with growth in both the containerised and non-containerised trade sectors.

Whilst exports remain affected by the weakness of overseas economies, the stronger Australian dollar and the continued effect of the drought, these same factors have increased the level of imports.

The major exports include non ferrous metals ie aluminium, chemicals, iron and steel, cotton and meat.

Port Botany update

The proposed Port Botany expansion Newsletter No.4, has recently been distributed to 16,000 homes and businesses in the Botany area. The newsletter presents the proposed design for the public recreational and environmental areas along Foreshore Beach and the Penrhyn Estuary, and provides an update on the Environmental Impact Statement (EIS).

This design is based on input from Sydney Ports' consultation with stakeholders and community feedback. It entails significant enhancements which will upgrade the existing foreshore beach areas to create valuable environmental and public recreational facilities.

Some of the key features of the design include:

- A strong nature emphasis. This reflects the high values placed on the ecological features of Penrhyn Estuary and the open space of Foreshore Beach by the community, and local and state government representatives.
- Expansion of the existing habitat for shorebirds. The design would provide tidal flats for feeding, a salt marsh for roosting and additional seagrass meadows, with the potential to increase the number of migratory birds.
- Retention of Foreshore Beach uses with a passive recreational focus.
- Enhanced pedestrian and cycle access. This would include a shared pathway for pedestrians and cyclists along the length of the beach and estuary. As there are currently no links across Foreshore Road, between Sir Joseph Banks Park and the beach, the design provides for two separate crossings - a pedestrian overpass and a signalised crossing.

The EIS preparation is nearing completion and it is anticipated it will be lodged mid this year for public exhibition, consideration and comment. The EIS will present the proposal; methodology of investigations undertaken; identify impacts, mitigation measures and enhancement opportunities; and address those issues raised during the preparation of the EIS by the community and other stakeholders.

The EIS for Patrick's proposal to upgrade their existing operations and expand their facilities by 2.5 hectares has recently been exhibited. Sydney Ports supports the proposal's objective to increase terminal efficiency and capacity.

The recent independent review of Sydney Ports proposed Enfield Intermodal Terminal by The Hon Milton Morris AO reinforced there was a need for a network of intermodal terminals to support the growth of containers moved by rail. Sydney Ports strongly supports this principle as this will enable more containers to be taken off the road. Sydney Ports believes further consideration should also be given to the Enfield site's potential in forming part of this network in some capacity.

Sydney Ports has a role in ensuring more containers (currently 25%) are moved by rail and welcomes the Government's new target of achieving 50% of container movements by rail in the medium term.

The objective of the proposed Port Botany Expansion is to provide additional port-land and berths to meet future trade growth in the Sydney basin and NSW generally. This requirement is in addition to Patrick's proposal to increase their terminal capacity and complementary to the objective of increasing rail's market share for moving containers.

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Emergency Response Practice

A practice exercise of the Port Botany Emergency Plan was held in August, involving all the emergency services and port tenants and coordinated by the local police force and Sydney Ports.

The scenario was a spill of a highly flammable product in a controlled area, in one of the chemical storage facilities near the port.

This exercise was held in preparation for a field exercise using the same scenario, which is to be held later this year.

Sydney Ports operates a 24-hour emergency number for port related incidents. That number is 9296 4000.

Involvement with HMS Nottingham incident

Sydney Ports provided logistical support and technical assistance for the management of the HMS Nottingham vessel incident near Lord Howe Island in July. A number of Sydney Ports' operational specialist staff and equipment were deployed to the site on one of the Australian Defence Force Hercules aeroplanes.

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Sydney Ports has recently confirmed sponsorship of the "Sydney Ports 2003 NSW State Sabot Championship" and the 2003 Navigators Cup.

Yarra Bay Sailing Club will host the Sydney Ports 2003 Sabot Championship to be held during the Australia Day long weekend in January. It is anticipated 90 boats will compete, making this the largest Regatta to be held in Yarra Bay for 20 years.

Sydney Ports is also a co-sponsor of the 2003 Navigators Cup to be held in January. The race commemorates the great navigators, Lieutenant James Cook, Le Compte Jean-Francois Galup de La Perouse and Captain Arthur Phillip. The contestants race from Botany Bay, enter Sydney Harbour and finish in Gunnamatta Bay, Port Hacking. The event will be hosted by the Cronulla Sailing Club.

Community service for the recreational boating enthusiasts

Sydney Ports' Harbour Control Tower will now play a vital role as a conduit for the Coastal Radio Network (CRN), an important community service for the recreational boating community. The CRN, which was operated nationally, is now being operated on a State and Territory basis with the continued and important support of the volunteer marine rescue organisations. Sydney Ports Harbour Control Tower will monitor HF and VHF distress, safety, and emergency messages, and provide weather information on VHF Channel 67.

Proposed Port Botany Expansion

Environmental investigations and associated community consultation activities on the proposed Port Botany Expansion are continuing.

Some of the issues of concern raised in community consultations to-date include potential loss of beach access, continued use of a boat ramp, increased truck traffic to and from the port, potential impact on local amenity and on seagrasses and groundwater levels, and potential noise from the proposed new port operations.

Some of the environmental, social and economic research studies are at an early stage, with several studies still to be commissioned.

You are encouraged to provide input about your issues and/or raise questions regarding the proposal by using the contact details listed below. Sydney Ports will continue to listen to community concerns over the following months.

Over the next few months, traffic surveys and marine field investigations will be undertaken in the area. These activities do not signal the commencement of development, but are part of the process of gathering information in addition to community consultation.

When the studies are completed and their results are gathered together and analysed, we will be able to identify potential project impacts and propose sustainable solutions and management measures. Importantly, it will help address and answer questions and concerns raised by you and other stakeholders.

A further update on the proposal's progress will be provided in Newsletter 3, to be letterboxed to almost 16,000 homes and businesses surrounding the port area.

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Award Winner

In November 2002, at the Lloyds List DCN shipping industry annual awards dinner, Sydney Ports Corporation was awarded the Australian Port of the Year Award for 2002. Lloyds List DCN is the principal shipping and transport industry journal in Australia and overseas.

This year the Port of the Year Award recognised excellence in the management of the road and rail interface, that is, the movement of cargo in and out of ports via their road and rail connections. This is considered by many to be one of the most important challenges facing the ports nationally and internationally.

The submission which won Sydney Ports the award was based upon the regeneration of Glebe Island and White Bay and rail initiatives for Port Botany.

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Sydney Ports is a keen supporter of local community events.

Container X-Ray Facility

Sydney Ports purchased some 13 hectares of land at Lot 103 Bumbora Point Road, formerly the Bunnerong Power Station site, in May 2002.

2.7 hectares of that land has been leased to Australian Customs for the establishment of a Container X-Ray facility which commenced operations in January 2003. The landmark x-ray technology allows entire containers to be inspected by Customs for the detection of illegal goods.

Traffic Survey

The Roads and Traffic Authority (RTA) conducted a survey of truck traffic on Botany Road during February. Sydney Ports awaits the results of the survey and is supportive of the Government's initiative to minimise the growth in trucks on Botany Road.

Proposed Port Botany Expansion Update

Sydney Ports has welcomed stakeholder feedback, which coupled with technical information, enabled the development of the proposed port expansion concept layout to preserve the environmentally sensitive area of Penrhyn Estuary and Foreshore Beach recreational area.

Sydney Ports does not propose the reclamation of Foreshore Beach. In addition, the boat ramp, which is a highly valued community facility, will be relocated to an area along Foreshore Beach not far from the current location. The Sir Joseph Banks Park, which was originally enhanced and enlarged by the port authority in the 70's, will be enhanced by a pedestrian/cyclebridge between the park and beach, and a pedestrian crossing at a signalised intersection, as requested by community representatives.

Technical studies forming part of the comprehensive Environmental Impact Statement (EIS) are yielding valuable information and will guide the identification of appropriate measures or opportunities to enhance the area, such as sediment traps to improve the polluted streams feeding into the Penrhyn Estuary.

Preliminary findings for the groundwater study indicate that while natural changes in groundwater levels may range between 1 and 5 metres, the predicted maximum rise due to the proposed development is only 2 cm. This rise could be reduced with proposed mitigation measures. Preliminary findings of the bay hydrodynamics study indicate the impact on bay wide sediment transport and tidal flows is expected to be minimal as the proposed site expansion is shielded by the existing breakwater and the 3rd runway.

Preliminary findings of the traffic study show that port traffic over a time frame to 2021 would be less than 1% of regional traffic. However, terminal truck movements into and out of the port precinct are forecast to increase from 2,900 to 4,700. Mitigative measures include increasing freight movement by rail, providing on-site truck queuing, and in consultation with the RTA and City of Botany Bay, to minimise truck traffic on Botany Road.

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SYDNEY PORTS

PORT BOTANY EXPANSION

TRADE AND CAPACITY STUDY

prepared for

SYDNEY PORTS CORPORATION

by

ACCESS ECONOMICS and MAUNSELL AUSTRALIA

March 2003

Contents

Report context

Access Economics and Maunsell Australia were commissioned to prepare this report in the context of the Environmental Impact Statement (EIS) being prepared by the Sydney Ports Corporation for its proposed Port Botany Expansion.

This report provides forecasts of containerised trade and port capacity, with a particular focus on container terminal development at Port Botany – it does not address break bulk, motor vehicle, dry bulk or liquid bulk facilities.

The report also examines the landside movement of containers and assesses the competitive position of Port Botany in this regard.

While this report provides trade and capacity forecasts with and without additional container terminal facilities, it does not address the economic cost benefit nor financial viability of constructing this additional capacity, which is addressed elsewhere in the EIS.

Due to the uncertainties surrounding future trade growth, productivity and developments at NSW ports, this report presents a range of scenarios for future trade growth, productivity and throughput at Port Botany and alternative NSW ports.

This report is based on data sources available up to a cut off of 26 November 2002.

Executive Summary

Trade Performance – Recent History

Sydney Ports containerised trade was 1,009,342 TEU during the 2001-02 financial year, of which 917,526 TEU were handled at the Port Botany container terminals, the remainder were handled through the multipurpose berths in Port Jackson.

Year	**1992-93**	**1993-94**	**1994-95**	**1995-96**	**1996-97**	**1997-98**	**1998-99**	**1999-00**	**2000-01**	**2001-02**
TEU	561,711	593,290	669,669	698,918	730,446	800,778	879,179	1,016,401	990,654	1,009,342
Annual growth		*5.6%*	*12.9%*	*4.4%*	*4.5%*	*9.6%*	*9.8%*	*15.6%*	*-2.5%*	*1.9%*
Annual compound growth rate over the past decade:										***6.7%***

Containerised trade growth fluctuates from year to year, but has averaged a long term compound growth rate of 6.7% per annum since 1992-93.

Some of the historical container trade growth was due to the increased containerisation of commodities previously shipped in bulk or break bulk. Most commodities capable of containerisation are now containerised, so this source of growth in history will be less significant in future years.

Newcastle and Port Kembla combined have handled in the range 10,000 to 15,000 TEU per year in recent years. There are no other ports in NSW capable of handling containers.

Economic Outlook

Trade through Sydney's Ports is closely related to the outlook for the NSW economy. The economic outlook for population growth, consumption, production and employment levels all directly impact on the long term growth of containerised trade in Port Botany.

Following a brief post-Olympic slump in activity, the NSW economy is in good health, growing in line with the strong national total. Whilst a possible weakening in the strong housing market is a concern, the long term fundamentals for the state are generally positive. NSW real GSP is forecast to grow 2.2% per annum over the next 5 years to 2006-07 and 2.9% per annum over the five years to 2011-12.

The future population of Sydney impacts directly on demand and the volume of trade through Sydney's ports and is the subject of much debate – this report adopts ABS population projections, with the current 4.04 million population of Sydney projected to reach between 5.7 million (low demand scenario) and 6.2 million (high demand scenario) by 2051.

Trade Forecasts

Prospects for growth in containerised trade are bright, with strong domestic growth, continuing trade liberalisation and some increasing containerisation of commodities all contributing to future trade growth.

Trade forecasts are based on a disaggregated assessment of 42 major imported commodities and 42 major exported commodities. The forecasts reflect long term trends, averaging over short term fluctuations. For the purpose of port planning, three scenarios are provided for growth in NSW container traffic:

High demand: the result of increased containerisation of bulk commodities (such as grain), rapid trade liberalisation and strong population growth in the Sydney region. NSW trade reaches 1.5 million TEU in 2008-09 and 2 million TEU in 2013-14.

Medium demand: based on average long term economic and demographic growth trends, world trade prospects and likely operational arrangements. NSW trade reaches 1.5 million TEU in 2009-10 and 2 million TEU in 2016-17.

Low demand: assumes no further containerisation of bulk commodities, limited population growth in the Sydney region and overall slower trade growth. NSW trade reaches 1.5 million TEU in 2011-12 and 2 million TEU in 2019-20.

A further three scenarios have been prepared to allow for different possible distributions of total NSW container traffic between Port Botany, Port Jackson, Port Kembla and the Port of Newcastle. The scenarios have been prepared only for the purpose of contingency planning at Port Botany – these scenarios should not be relied upon for the purpose of evaluating any proposed developments at Newcastle and Port Kembla.

Scenario A – No significant containerised trade through Newcastle/Pt Kembla. Port Botany handles all NSW containerised traffic, other than 50,000 TEU through Port Jackson. This reflects a continuation of the current 2002-03 situation, with Port Botany continuing to handle at least 95% of all NSW container traffic.

Scenario B – Newcastle/Pt Kembla handle 100,000 TEU by 2010-11. Port Jackson continues to handle 50,000 TEU and the remainder of NSW containers are handled through Port Botany. Beyond 2010-011, Newcastle/Pt Kembla grow to 150,000 TEU by 2024-25.

Scenario C – Newcastle/Pt Kembla handle 250,000 TEU by 2010-11. Port Jackson continues to handle 50,000 TEU and the remainder of NSW containers are handled through Port Botany. Beyond 2010-011, Newcastle/Pt Kembla grow to 380,000 TEU by 2024-25.

Container Port Capacity Analysis

Port capacity is dependent on a number of parameters, including stevedore productivity, shipping patterns, technology and operational parameters. The assessment of capacity incorporates detailed simulation modelling of ship queuing based on forecasts of average vessel sizes and cargo exchanges by Maunsell and Drewry. The capacity analysis also considers a range of factors including crane rates, crane intensity, hours at berth with no

labour allocated, the proportion of 40 foot containers, peaking factors and market share imbalances between the stevedores.

However, most of these productivity parameters are beyond the direct control of the port owner. In planning the scope and timing of future developments, the port owner should therefore consider the range of likely outcomes and the consequences of planning based on each outcome. To assist in planning, future capacity has been forecast using three scenarios of productivity improvement:

No productivity improvement scenario: assumes stevedore productivity continues at the quite strong levels achieved during 2002, without further improvement. Other operational parameters remain at 2002 levels. Capacity of the existing facilities remains at 1.3 million TEU throughout the planning period.

Modest productivity improvement scenario: allows for further improvements over 2002, based on investments in new equipment currently being undertaken or planned by stevedores and a modest change in other operational parameters over time. Capacity of the existing facilities increases to 1.6 million TEU by 2010-11 and 1.7 million TEU by 2014-15.

High productivity improvement scenario: approximates to the appraisal of capacity by the stevedores themselves and results in a generally optimistic "world's best terminal" productivity view of capacity. Capacity of the existing facilities increases to 2.1 million TEU by 2014-15.

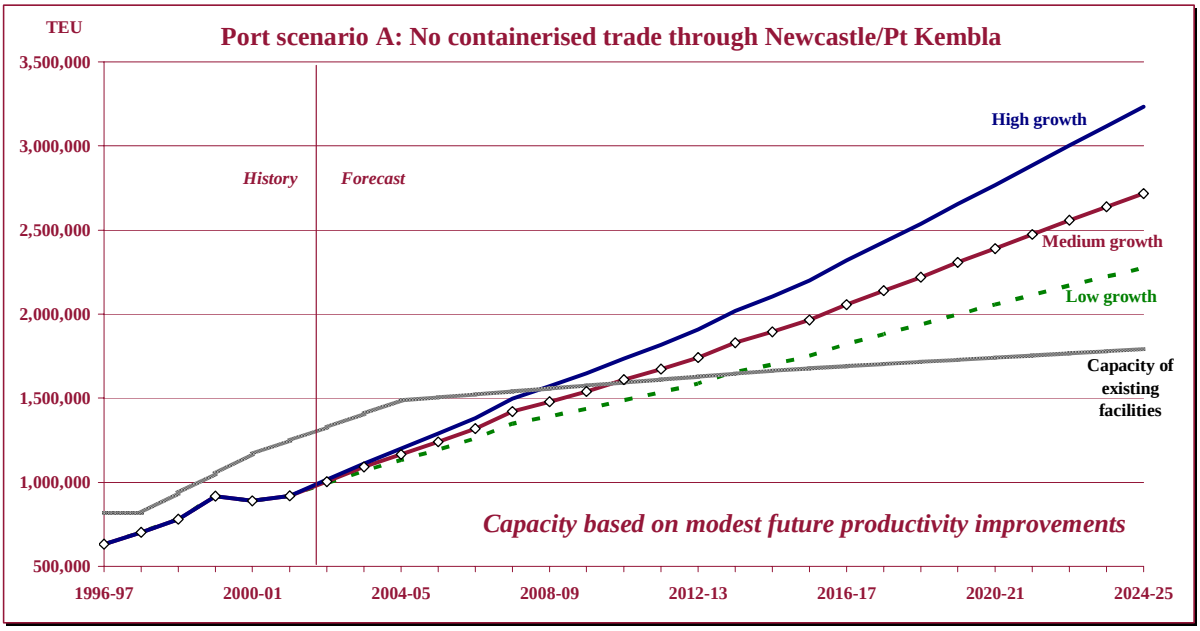
The no productivity improvement scenario is included in the modelling for reference purposes, but is at the very low end of the range of future productivity.

The high scenario involves very rapid increases in productivity (and thus capacity). Given the long lead times for construction of major port infrastructure and the fact that the port owner has no direct control over achieving high productivity outcomes, it may be imprudent to use this scenario as a basis for port planning.

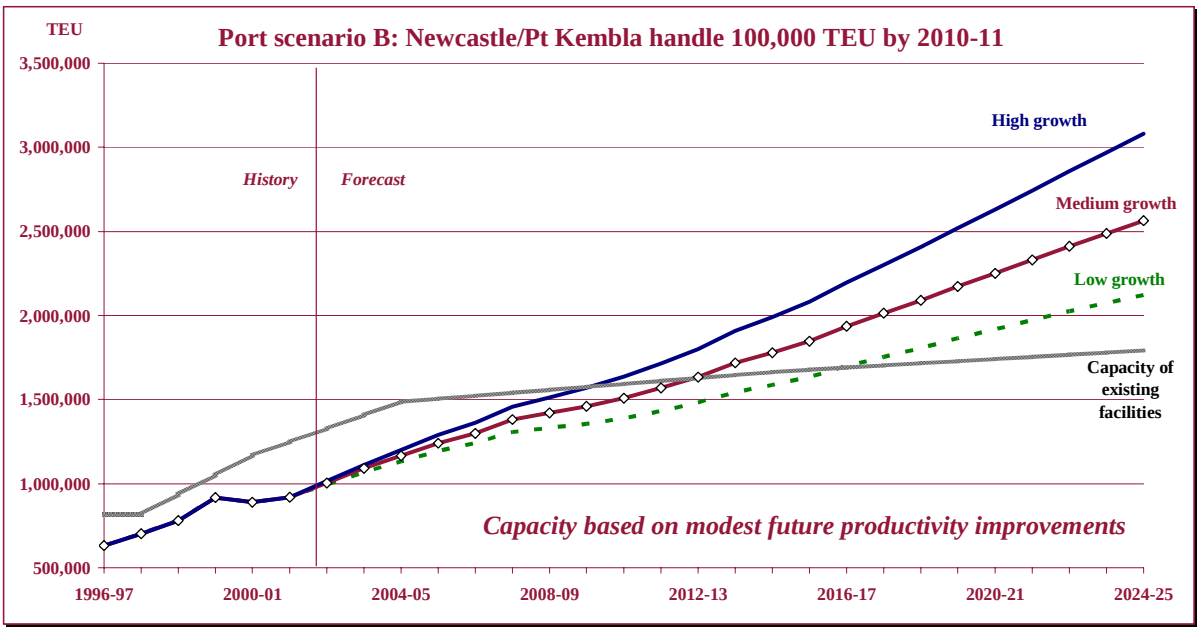
It is therefore suggested that the modest productivity improvement scenario is a reasonable basis for port capacity planning.

The following charts summarise the trade forecasts and capacity analysis for Port Botany.

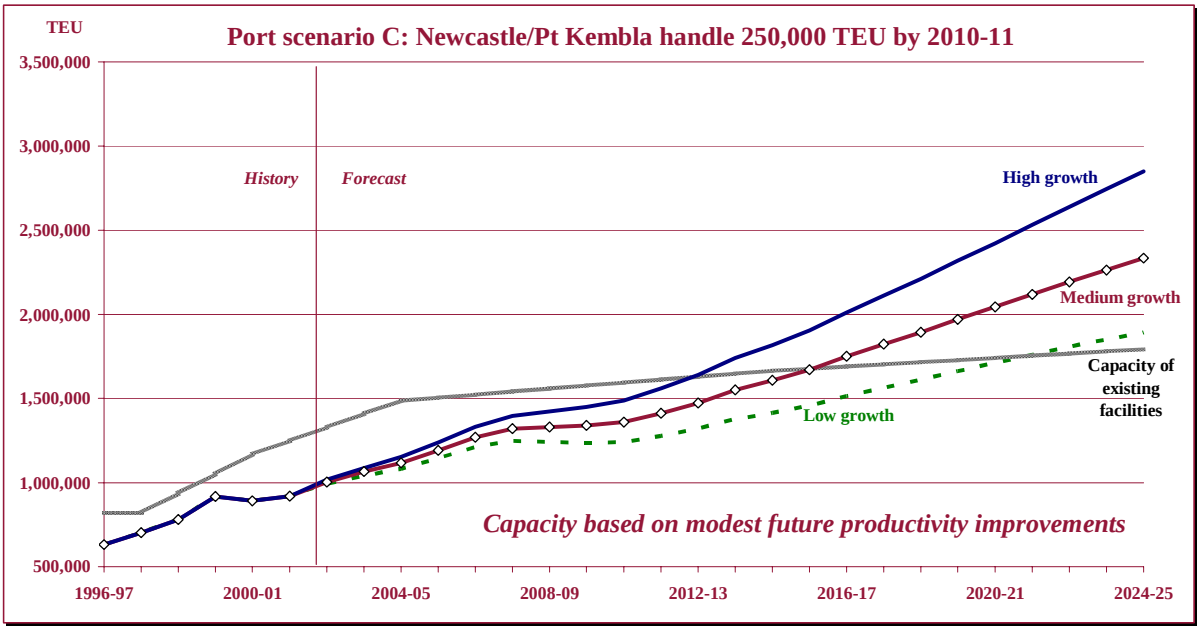
Port Botany capacity versus demand – scenario A



Port Botany capacity versus demand – scenario B



Port Botany capacity versus demand – scenario C



The key points where forecast demand intersects with Port Botany capacity are summarised in the following tables:

Scenario A – existing facilities reach capacity in the following year:

Demand growth / Productivity	High	Medium	Low
No increase	2006-07	2006-07	2007-08
Modest increase	2008-09	2010-11	2013-14
High increase	2013-14	2017-18	2024-25

Scenario B – existing facilities reach capacity in the following year:

Demand growth / Productivity	High	Medium	Low
No increase	2006-07	2007-08	2008-09
Modest increase	2009-10	2012-13	2016-17
High increase	2015-16	2019-20	beyond 2024-25

Scenario C – existing facilities reach capacity in the following year:

Demand growth / Productivity	High	Medium	Low
No increase	2006-07	2008-09	2012-13
Modest increase	2012-13	2015-16	2021-22
High increase	2018-19	2023-24	beyond 2024-25

Competitive Analysis

Ports compete on the basis of the entire transport chain on offer. This includes road and rail links, capacity, congestion costs and the frequency and origin/destination of scheduled shipping services.

Approximately 80% of all containerised freight using Port Botany originates or terminates in the greater Sydney area. Sydney basin freight using alternative ports such as Newcastle would incur high land transport costs to link to final destinations or origins, compared with freight using Port Botany. The additional road transport costs from using Newcastle range from $40 per TEU (North-West Sydney), $150 per TEU (industrial areas in Western Sydney) and $280 per TEU (Botany industrial area). A lack of port capacity in Sydney, using Newcastle to serve substantial volumes of Sydney-based international freight, would also contribute to congestion levels on the F3 between Sydney and Newcastle.

Road transport costs to the Sydney region are significantly lower from Port Botany

Port / *Region*	Road transport per TEU - 2002			Difference	
	Botany	Port Kembla	Newcastle	Port Kembla	Newcastle
Botany	$ 160	$ 320	$ 440	$ 160	$ 280
Inner West Syd	$ 220	$ 320	$ 380	$ 100	$ 160
Central West Syd	$ 250	$ 340	$ 380	$ 90	$ 130
Industrial West Syd	$ 250	$ 350	$ 400	$ 100	$ 150
Blacktown	$ 250	$ 400	$ 360	$ 150	$ 110
North West Syd	$ 280	$ 410	$ 320	$ 130	$ 40
Newcastle	$ 440	$ 620	$ 160	$ 180	$ -280
Wollongong	$ 320	$ 190	$ 620	$ -130	$ 300
Narrabri	$ 960	$ 1,110	$ 780	$ 150	$ -180
Parkes	$ 690	$ 720	$ 810	$ 30	$ 120
Griffith	$ 950	$ 710	$ 1,080	$ -240	$ 130

Rail is more cost effective, though Port Botany retains an advantage

Region \ *Port*	Rail transport per TEU - 2002			Difference	
	Botany	Port Kembla	Newcastle	Port Kembla	Newcastle
Yenora	$ 150	$ 200	$ 250	$ 50	$ 100
Minto	$ 160	$ 210	$ 270	$ 50	$ 110
Sandown	$ 150	$ 200	$ 250	$ 50	$ 100
Enfield	$ 150	$ 200	$ 250	$ 50	$ 100
Griffith	$ 470	$ 420	$ 540	$ -50	$ 70
Parkes	$ 350	$ 410	$ 450	$ 60	$ 100
Narrabri	$ 420	$ 460	$ 320	$ 40	$ -100
Melbourne	$ 610	$ 560	$ 680	$ -50	$ 70
Brisbane	$ 650	$ 710	$ 570	$ 60	$ -80

Rail transport on the Newcastle – Sydney corridor is expensive because of limited freight capacity. Freight travelling Newcastle – Sydney uses capacity that could otherwise be sold as a Brisbane – Sydney train path, making Sydney – Newcastle freight a less attractive proposition to the rail infrastructure owner compared with Sydney – Brisbane freight.

The land transport cost associated with containerised trade through Sydney in 2001-02 to the geographical distribution of origins/destinations was compared with the cost that would have been incurred if the same trade was put through Newcastle (assuming it was actually possible). The land transport cost through Newcastle would have been $67 million higher than through Sydney, an average of $67 per TEU.

The Port of Newcastle has invited offers for financing, developing and operating a multi-purpose terminal at the former BHP steelworks site on the South Arm of the Hunter River, covering a total area of 45 hectares. The terminal will provide two container berths and facilities for other cargoes. Whilst building a new container terminal in Newcastle may well attract some trade over time, it is unlikely to work as an alternative port for the bulk of Sydney basin container trade. Port Kembla also has plans to attract container trade from Sydney. The analysis of demand and capacity above examined scenarios of the potential impact of these proposals on Port Botany (scenario B and C), however, there remains a question mark over whether these alternative ports can actually achieve these scenarios.

Economic Impacts of Constrained Trade

A modest amount of congestion can be tolerated, given the high cost of providing additional port capacity. That said, congestion and queuing costs start to increase exponentially once capacity limits are reached and soon become a major cost imposed on trade. The costs of congestion and queuing, which are avoided if additional capacity is developed, could amount to over $100 per TEU by 2020 (in current dollars).

Although some industries may relocate from Sydney to Newcastle or Port Kembla, the more significant competitive threat for Sydney and NSW is that over the longer term, business will decide to relocate or establish new factories in Brisbane or Melbourne. A firm deciding

where to build a new warehouse or factory, finding the ports of Sydney congested could prefer to locate in Melbourne or Brisbane (or Auckland or elsewhere in South East Asia) rather than land bridging to Newcastle.

As future throughput increases beyond approximately 1.6 million TEU in 2010-11 (based on a scenario of medium trade growth and modest productivity growth), additional port infrastructure will be needed to relieve congestion (such as ship queuing, double handling and truck waiting), resulting in a lower-cost supply chain. This will provide substantial cost savings to all trade handled through Port Botany.

That is, it is oversimplifying to describe the proposed developments in Port Botany as only accommodating future growth. Rather, the proposed developments have a dual purpose – handling the first 1.6 million TEU of throughput more efficiently **and** accommodating future growth beyond 1.6 million TEU.

Access Economics and Maunsell Australia

March 2003

1. Introduction

Sydney Ports Corporation is preparing an Environmental Impact Statement (EIS) for the proposed Port Botany Expansion. The Expansion involves development of additional container terminal facilities on the north side of Brotherson Dock.

This Report is focused exclusively on container traffic and does not consider break-bulk, bulk or motor vehicle traffic. The report takes account of numerous recent changes in the market environment over the past few years, including:

- Significant changes in terminal productivity following the 1998 Waterfront Dispute.
- Changing economic conditions, including a slow down in economic activity in Sydney after the Olympics and a subsequent resurgence.
- Introduction of 4,000 TEU[1] capacity container ships to Australian trade routes in 2001.
- Sale of FreightCorp and National Rail to the Toll/Patrick Consortium in early 2002.
- Significant planned investment by Patrick in its Botany Terminal.
- Introduction of Vehicle Booking Systems at both the CTAL (now P&O PBCT) and Patrick terminals;
- Rapid growth of short-haul rail shuttle traffic between the Botany container terminals and inland terminals in western Sydney.

This report draws on the following additional assessments obtained separately by Sydney Ports Corporation:

- Forecast Development of Container Ship Size in the Main Australian Trades, Maunsell Australia in association with Drewry Shipping Consultants, April 2002;
- Simulation of Shipping Movements and Berth Utilisation at Brotherson Dock, Port Botany, Maunsell Australia, April 2002.
- Traffic and Landside Transport Study for Proposed Port Botany Expansion, Maunsell Australia, Draft Final Report, October 2002.

[1] TEU – twenty-foot equivalent unit (standard shipping container)

2. Trade Performance – Recent History

Sydney Ports containerised trade was 1,009,342 TEU during the 2001-02 financial year, of which 917,526 TEU were handled at the Port Botany container terminals, the remainder were handled through the multipurpose berths in Port Jackson.

Containerised trade growth fluctuates from year to year, but has averaged a long term compound growth rate of 6.7% per annum since 1992-93.

Some of the historical container trade growth was due to the increased containerisation of commodities previously shipped in bulk or break bulk. Most commodities capable of containerisation are now containerised, so this source of growth in history will be less significant in future years.

Newcastle and Port Kembla combined have handled in the range 10,000 to 15,000 TEU per year in recent years. There are no other ports in NSW capable of handling containers.

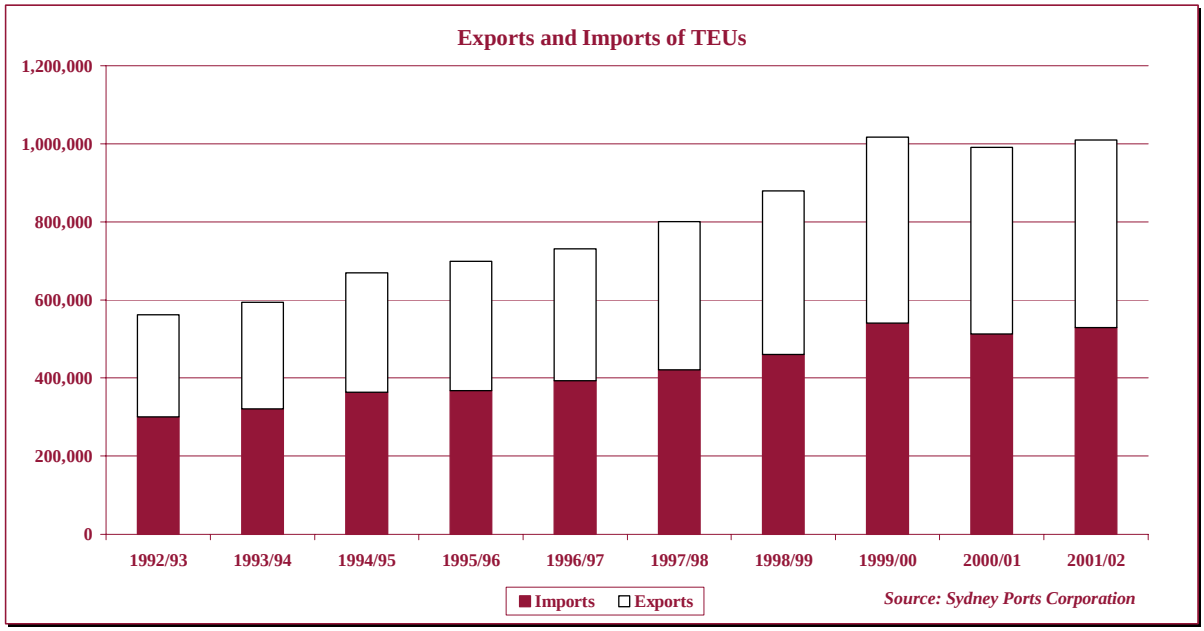
In 2001-02 Sydney Ports handled 22.6 million tonnes of cargo trade.[2] Oil and containerised cargoes made up the bulk of this trade, accounting for 49% and 40% of total trade weight respectively. Gypsum, cement, motor vehicles and propane make up most of balance.

Containerised trade grew by 15.6% in 1999-00, passing the 1 million TEU milestone for the first time that year, partly due to the high level of economic activity during the pre-Olympics preparations and partly due to strong agricultural exports. In 2000-01 containerised trade fell slightly by 2.5% to 990,654 TEU. During 2001-02 throughput increased 1.9%, to again exceed the 1 million TEU mark. As a result, containerised trade has hovered around the 1 million TEU mark for the past three years, as shown in Figure 2.1.

More recently, trade for the four months to October 2002 was 13.5% higher than the corresponding months of 2001. The drought may impact on agricultural exports in the second half of 2002-03.

[2] This trade volume is based on nett tonnage recorded by Customs, which may differ slightly from other data sources.

Figure 2.1 Sydney Containerised Trade – Historical Trends



The growth in trade in 2001-02 was mostly driven by increases in imports, exports have remained relatively flat for the past two years, as detailed in Table 2.1.

Table 2.1 Containerised Trade – Recent Growth

Year	1997-98	1998-99	1999-00	2000-01	2001-02
TEU					
Exports	380,331	419,343	476,187	477,787	480,104
Imports	420,447	459,836	540,214	512,867	529,238
Total	800,778	879,179	1,016,401	990,654	1,009,342
Growth in TEU					
Exports	12.6%	10.3%	13.6%	0.3%	0.5%
Imports	7.1%	9.4%	17.5%	-5.1%	3.2%
Total	9.6%	9.8%	15.6%	-2.5%	1.9%

Over the past decade, containerised trade growth has been reasonably variable year to year, yet the longer term trend shows average annual growth rates since 1992-93 have been strong, at a compound rate of 6.7% per annum. Table 2.2 summarises the long term trend.

Table 2.2 Containerised Trade – Long Term Growth

Year	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
TEU	561,711	593,290	669,669	698,918	730,446	800,778	879,179	1,016,401	990,654	1,009,342
Annual growth		*5.6%*	*12.9%*	*4.4%*	*4.5%*	*9.6%*	*9.8%*	*15.6%*	*-2.5%*	*1.9%*
Annual compound growth rate over the past decade:										***6.7%***

Since 1997-98, the strongest growth has been in commodities such as food, beverages, animal foods, chemical and plastics. Excluding liquid bulk cargoes, paper and paper products are the largest traded commodity, followed by food preparations, iron and steel, cement, electrical machinery and cereals. There has been gradual change in the mix of major traded items since 1997-98, which were dominated by paper and paper products, iron and steel, power generated machinery, cement and cereals and cereal products.

The largest containerised commodities in terms of absolute tonnage are paper and paper products, food preparations, electrical machinery and iron and steel.

The top four countries for containerised trade with Sydney Ports are the same now as they were in 1997-98 – China, New Zealand, United States and Japan.

Table 2.3 and Table 2.4 provide the details on trade by commodity and the extent of containerisation for each commodity up to 2001-02.

The trade forecasts are developed based on an assessment of the outlook for each of the 42 commodity classifications and the extent to which each commodity is containerised. The following two tables are therefore a key input into the forecasting analysis discussed later in the report.

Some commodities are not efficient to containerise (such as oil and gypsum), so are likely to continue being shipped in bulk for the foreseeable future. Other commodities such as meat (which requires temperature control), can only be shipped in containers. Industry advice is that there are still some opportunities, albeit limited, for increased containerisation of some commodities. For example, paper and paper products are currently 82% containerised, so may be a source of future containerised trade growth if the degree of containerisation increases towards 100%.

Table 2.3 Commodity Trade, Mass Tonnes

	1997-98	1998-99	1999-00	2000-01	2001-02	CAGR
Meat	272,448	297,492	282,539	311,561	309,681	3.3%
Fish & Seafood	57,228	61,252	65,454	61,891	58,098	0.4%
Dairy Products	46,347	53,363	67,998	64,794	61,373	7.3%
Fruit & Vegetables	131,219	128,043	143,105	115,559	169,670	6.6%
cereals & cereals prep	330,221	416,922	452,507	498,218	390,060	4.3%
Oil seeds	137,907	124,503	133,990	72,854	115,386	-4.4%
Food preparations	285,681	295,839	390,402	482,149	516,186	15.9%
Sugar & Sugar prep.	158,747	158,586	171,361	170,980	198,055	5.7%
Beverages	169,580	181,684	219,595	282,299	314,469	16.7%
Animal Foods	161,371	173,505	224,431	239,243	251,813	11.8%
Salt	100,501	66,669	80,894	49,741	99,164	-0.3%
Gypsum	303,094	324,625	399,301	344,736	317,865	1.2%
Cement	349,838	484,841	459,057	447,014	479,983	8.2%
Ores, slag & ash	53,364	56,016	93,282	77,357	77,137	9.6%
Coal & coke	5,548	4,587	6,225	4,198	3,516	-10.8%
Oil crude	9,762,535	9,220,251	8,720,944	9,411,705	9,052,536	-1.9%
Oil Refined	1,947,998	2,398,756	2,658,149	2,662,465	2,056,299	1.4%
Butane	17,497	21,989	21,232	10,201	9,858	-13.4%
Propane	178,259	235,872	207,527	290,951	346,864	18.1%
Other Gas	38,007	48,596	39,970	28,776	13,373	-23.0%
Inorganic chemicals	9,173	206,843	139,579	107,586	126,981	92.9%
Organic chemicals	103,970	17,843	25,637	56,022	227,560	21.6%
Pharmaceutical products	28,925	47,360	79,052	75,911	62,273	21.1%
Fertilizers	15,009	6,055	1,233	316	1,586	-43.0%
Plastics & articles thereof	111,867	188,569	275,258	264,092	298,717	27.8%
Rubber & articles thereof	66,228	78,228	84,868	76,311	88,218	7.4%
Hides, furskins & articles of leather	38,460	71,793	69,864	67,472	55,556	9.6%
Wood & Articles of wood	268,337	345,931	486,430	344,829	298,105	2.7%
Paper & Paper products	803,888	724,178	855,828	764,540	937,837	3.9%
Wool	146,698	149,239	154,002	167,490	141,578	-0.9%
Cotton	295,175	297,257	286,597	364,074	295,120	0.0%
Textile yarn, Fabrics and made-up articles	148,216	195,766	298,168	203,270	193,420	6.9%
Iron & Steel and articles thereof	530,711	518,027	578,640	452,157	495,076	-1.7%
Copper, Nickel and articles thereof	168,202	69,556	109,300	124,709	144,309	-3.8%
Aluminium and articles thereof	244,116	311,035	340,200	322,007	365,934	10.7%
Lead, Zinc, Tin and other metals	35,795	100,291	74,048	56,769	116,239	34.2%
Power generated machinery	465,360	187,842	395,552	381,128	288,714	-11.2%
Electrical machinery	73,608	392,799	402,325	364,444	433,158	55.8%
Assembled Passenger vehicles	229,448	220,484	242,607	247,161	257,988	3.0%
Assembled Commercial vehicles	5,956	19,301	26,044	16,783	20,411	36.1%
Car parts, veh. Others	70,294	57,037	69,870	67,080	97,398	8.5%
Other Cargoes	2,885,310	2,915,463	3,229,887	3,172,658	2,847,346	-0.3%
Total	**21,252,136**	**21,874,288**	**23,062,952**	**23,323,501**	**22,634,910**	**1.6%**

Table 2.4 Containerised Commodities, Mass Tonnes

	2001-02		
	Tonnes in Containers	**Tonnes in Total**	**% in Containers**
Meat	309,681	309,681	100%
Fish & Seafood	58,068	58,098	100%
Dairy Products	61,342	61,373	100%
Fruit & Vegetables	169,427	169,670	100%
cereals & cereals prep	390,049	390,060	100%
Oil seeds	114,591	115,386	99%
Food preparations	481,163	516,186	93%
Sugar & Sugar prep.	11,146	198,055	6%
Beverages	304,512	314,469	97%
Animal Foods	251,787	251,813	100%
Salt	1,133	99,164	1%
Gypsum	169	317,865	0%
Cement	31,224	479,983	7%
Ores, slag & ash	33,395	77,137	43%
Coal & coke	3,516	3,516	100%
Oil crude	27	9,052,536	0%
Oil Refined	45,037	2,056,299	2%
Butane	69	9,858	1%
Propane	2	346,864	0%
Other Gas	2,959	13,373	22%
Inorganic chemicals	12,407	126,981	10%
Organic chemicals	136,584	227,560	60%
Pharmaceutical products	62,273	62,273	100%
Fertilizers	209	1,586	13%
Plastics & articles thereof	298,579	298,717	100%
Rubber & articles thereof	88,068	88,218	100%
Hides, furskins & articles of leather	55,556	55,556	100%
Wood & Articles of wood	201,231	298,105	68%
Paper & Paper products	765,474	937,837	82%
wool	141,565	141,578	100%
Cotton	295,120	295,120	100%
Textile yarn, Fabrics and made-up articles	193,420	193,420	100%
Iron & Steel and articles thereof	398,958	495,076	81%
Copper, Nickel and articles thereof	138,397	144,309	96%
Aluminium and articles thereof	365,934	365,934	100%
Lead, Zinc, Tin and other metals	87,047	116,239	75%
Power generated machinery	234,575	288,714	81%
Electrical machinery	433,158	433,158	100%
Assembled Passenger vehicles	10,945	257,988	4%
Assembled Commercial vehicles	10,869	20,411	53%
Car parts, veh. Others	73,096	97,398	75%
Other Cargoes	2,713,292	2,847,346	95%
Total	8,986,054	22,634,910	40%

3. Economic Outlook

Trade through Sydney's Ports is closely related to the outlook for the NSW economy. The economic outlook for population growth, consumption, production and employment levels all directly impact on the long term growth of containerised trade in Port Botany.

Following a brief post-Olympic slump in activity, the NSW economy is in good health, growing in line with the strong national total. The strong housing market is a concern, but the long term fundamentals for the state are generally positive. NSW real GSP is forecast to grow by 2.2% per annum over the next 5 years to 2006-07 and 2.9% per annum over the five years to 2011-12.

The future population of Sydney impacts directly on demand and the volume of trade through Sydney's ports and is the subject of much debate – this report adopts ABS population projections, with the current 4.04 million population of Sydney projected to reach between 5.7 million (low demand scenario) and 6.2 million (high demand scenario) by 2051.

3.1 Short Term Outlook

The short term outlook for the NSW economy (over the next 5 years) is a major determinant of how quickly Port Botany will reach capacity in the years ahead.

New South Wales' economy is in solid shape, growing in line with the healthy national total. In Sydney, low interest rates proved the key to a striking upturn in housing construction activity. It may be that many in the younger demographics saw the First Home Owners Grant and NSW Government assistance as their last, best hope to get into the housing market at all. Growth in Sydney's housing prices in the last year leads the nation, at over 20% under both the ABS[3] and REIA[4] measures. In turn, the combination of surging housing activity and rising household wealth (driven by property prices) has kept consumer spending rising at reasonable rates, albeit lower than any other State or Territory. Similarly, commercial construction is starting to climb, matching the trend seen nationally.

Housing construction growth directly increases imports through Port Botany, generating demand for many imported items including construction equipment, steel, appliances (such as refrigerators, microwaves and air conditioners) and fittings (such as carpets, tiles, curtains and light fittings).

[3] Australian Bureau of Statistics

[4] Real Estate Institute of Australia

However, as the Reserve Bank has pointed out, housing affordability has been stretched in Sydney. Large mortgages are now widespread. That means any further interest rate rises would place pressure on many households with large mortgage commitments – this could cause a housing slump to impact on both new housing construction and retail spending by home owners (and hence reduced demand for consumer good imports through Port Botany).

So, although Access Economics' forecasts for consumer spending growth in NSW in 2002-03 are very strong (backed up by improving job growth), they are also subject to considerable risk. In a sense, it is the consumers of Sydney and Melbourne (backed up by earlier rapid rises in house prices in both cities) who are most vulnerable to rate rises.

In spite of the long anticipated arrival of rising interest rates, NSW led the national **housing** sector upswing as at mid-2002. New housing starts even exceeded the levels recorded in the pre-GST peak, although they fell just short of the grant-assisted results of late 2001. Interest rates remain the key driver in the medium term, with implications for the investment market. Investors will also be concerned by the slowing in rental growth in Sydney, with the ABS' rental growth estimate for the past year lower than the national average for the first time in a decade. That said, there is little in recent trends in local housing starts to suggest that marked overbuilding has occurred (such as was seen in Queensland on occasion in the 1990s).

That leaves us projecting NSW's growth will continue to match Australia's in 2002-03, but with modest potential for downside risk given the State's considerable exposure to interest rate rises. The longer term future for NSW looks reasonably solid. Despite a hesitant global recovery, the growth advantage should return to NSW and Victoria as the economic character of growth moves away from the blue collar and commodity exporting States.

Investment has two components, housing and business. The latter has two **construction** components – industrial and resource construction in mining and downstream processing plus engineering work on roads, utilities and the like, and non-residential building, usually encompassing construction of factories, shopping malls, business estates, schools, and so on.

Business investment in NSW slumped during 2001-02. This was partly expected due to the anticipated drop-off as the Olympics. The State's exposure to IT industries also resulted in lower machinery and equipment spending as that sector suffered more than most in the recent global downturn. But the signs are positive that the lull in investment spending is over, with NSW set to share in the national upswing in business investment, although it won't be at the forefront of it.

Investment via **infrastructure and engineering construction** continues to be led by coal developments and transport infrastructure. A number of coal mine developments are underway, with more in planning. More spending on transport infrastructure is being led by the NSW Government, which lifted its capital works spending in the 2002-03 Budget, and is

encouraging private financing for some projects. The Epping-Chatswood rail link is underway, while the Western Sydney Orbital and Cross City Tunnel are expected to get underway in the next year, with the latter two involving private funding. Those projects will ensure a solid base for engineering construction work over the next few years (and hence imports of construction equipment). The new owners of Sydney airport are looking at a $500 million upgrade, including widening of runways, an upgrade of the international terminal and increased parking.

Non-residential building offers potential for an investment pick-up, though with white collar employment slow to recover, related investment may be pushed into 2003. Approvals for hotels are picking up after a severe trough, though the level of activity is still low by historic standards. Investment in retail premises didn't dip as badly and remains steady. A major retail redevelopment has commenced at Bondi Junction, while work on a major extension of Westpoint in Blacktown will start next year. There is potential for a lift in office building work over the next year. The value of office building work approved in mid-2002 was the highest quarterly reading for four years. Construction recently started on a $500 million tower at 126 Phillip St, while three other major CBD developments are pending. That suggests a solid amount of building activity in the pipeline but still more would be needed to declare a boom.

Looking ahead, and despite prospects for an anaemic global recovery, the growth advantage should return to NSW and Victoria, given the current exuberant domestic demand growth. Figure 3.1, Figure 3.2 and Table 3.1 provide an outlook for the NSW economy, based on the September 2002 issue of the Access Economics publication *Business Outlook*.

In summary, NSW real GSP is forecast to growth 2.2% per annum over the next 5 years to 2006-07 and 2.9% per annum over the five years to 2011-12.

Figure 3.1 NSW Economy - Growth Forecast

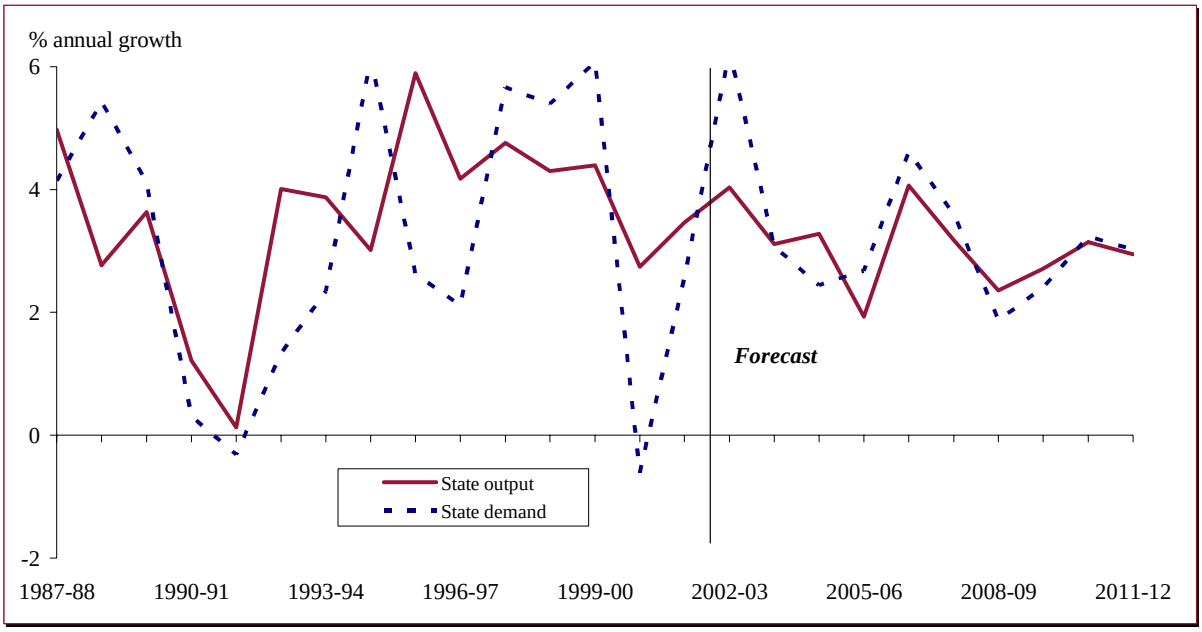


Figure 3.2 NSW Economy – Share of National Total

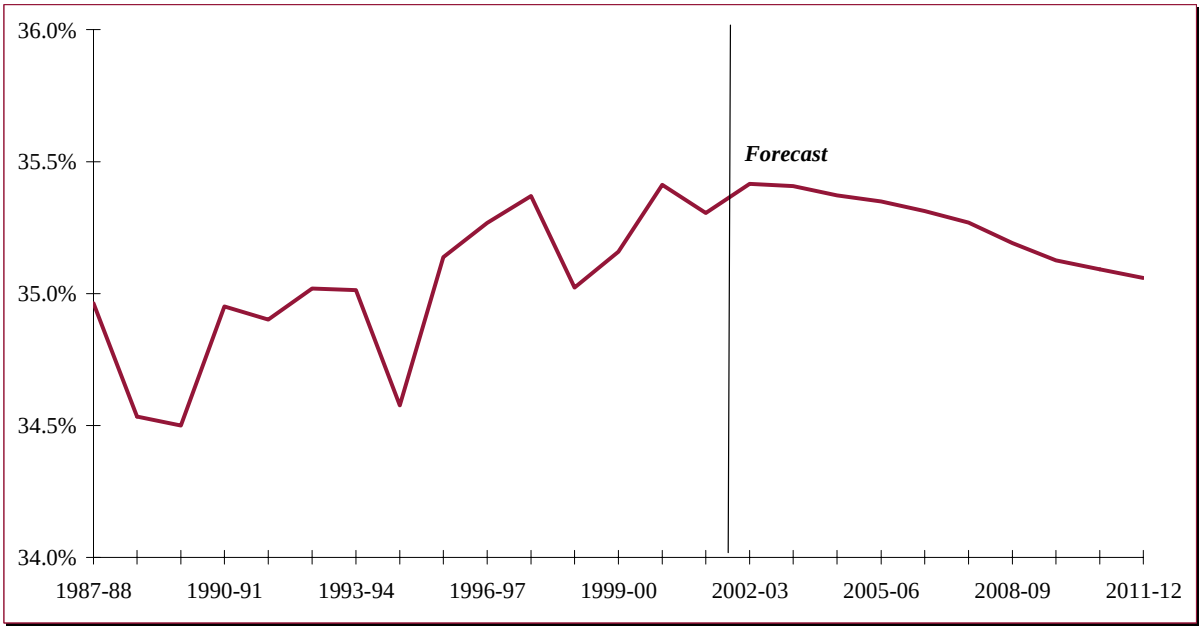


Table 3.1 Detailed NSW Growth Forecasts

Summary of NSW outlook		History			Forecast									
		1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Gross State product	Constant price ($m)	231,696	238,051	246,293	256,226	264,200	272,855	278,117	289,424	298,609	305,633	313,910	323,780	333,315
	% change	4.4	2.7	3.5	4.0	3.1	3.3	1.9	4.1	3.2	2.4	2.7	3.1	2.9
New South Wales as a share of Australian output %		35.2%	35.4%	35.3%	35.4%	35.4%	35.4%	35.3%	35.3%	35.3%	35.2%	35.1%	35.1%	35.1%
Real final demand	Constant price ($m)	236,060	234,619	240,663	255,728	263,578	270,009	277,237	290,010	300,447	306,067	313,415	323,549	333,320
	% change	6.1	-0.6	2.6	6.3	3.1	2.4	2.7	4.6	3.6	1.9	2.4	3.2	3.0
Private consumption	Constant price ($m)	143,306	147,335	151,357	157,972	162,850	168,414	170,439	176,900	184,109	188,217	192,468	198,246	204,405
	% change	4.1	2.8	2.7	4.4	3.1	3.4	1.2	3.8	4.1	2.2	2.3	3.0	3.1
International exports	Constant price ($m)	24,917	25,436	26,101	27,268	29,915	32,089	32,413	34,892	38,109	39,817	41,348	43,029	44,686
	% change	13.6	2.1	2.6	4.5	9.7	7.3	1.0	7.6	9.2	4.5	3.8	4.1	3.9
International imports	Constant price ($m)	51,645	52,503	53,535	60,315	65,479	65,715	67,903	74,856	83,929	84,717	86,008	89,422	92,644
	% change	18.5	1.7	2.0	12.7	8.6	0.4	3.3	10.2	12.1	0.9	1.5	4.0	3.6
Industrial production	Constant price ($m)	34,831	34,670	36,085	38,473	40,491	42,106	42,648	44,770	46,309	47,210	48,340	49,764	51,152
	% change	3.7	-0.5	4.1	6.6	5.2	4.0	1.3	5.0	3.4	1.9	2.4	2.9	2.8
Total population	Persons ('000s)	6,491	6,578	6,650	6,721	6,790	6,850	6,908	6,966	7,023	7,078	7,132	7,185	7,237
	% change	1.2	1.3	1.1	1.1	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.7	0.7
Population aged 15 to 64	Persons ('000s)	5,164	5,247	5,320	5,394	5,463	5,527	5,592	5,656	5,719	5,781	5,843	5,902	5,961
	% change	1.5	1.6	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.0
Employment ('000s)	Persons ('000s)	2,994	3,049	3,081	3,131	3,203	3,251	3,255	3,298	3,366	3,381	3,394	3,424	3,458
	% change	3.5	1.8	1.1	1.6	2.3	1.5	0.1	1.3	2.1	0.4	0.4	0.9	1.0

Note: the growth in total international imports and exports, shown in the above table, includes all trades in goods and services, of which only a subset is containerised trade. For example, the imports of new Qantas and Virgin Blue aircraft (a substantial number of new aircraft are being imported over the next few years) causes fluctuations in imports in the above table, but does not impact on containerised trade through Port Botany. The forecasts in this report are based on a detail disaggregation of the above aggregated trade figures into in 42 seaborne and airborne commodities.

3.2 Long-Term Outlook

Beyond the short term outlook described above, long term trends in population and productivity take over to drive the forecasts of long term future trade growth through Port Botany – a major determinant of the long term planning of additional port capacity.

The long-term outlook for the NSW economy is generally positive. NSW has a more diverse industry structure than the economies of the southern States. NSW has traditional manufacturing, mining and agriculture industries, but has also developed new industries in service and knowledge sectors including hospitality, tourism, financial and business services. The appeal of Sydney as a destination for business and leisure provides avenues for growth, as the economy becomes increasingly global in its outlook.

The ageing of the population plays a role in the long-term economic outlook. The baby boomers will start to retire en masse in 5-10 years, causing growth in the labour force to slow substantially. Initially this will help reduce unemployment but over the longer term it will limit the ability of the economy to grow (as labour is the most fundamental input to the productive process of the economy).

The population of NSW is ageing and this may limit economic growth in the longer term, unless more flexible work arrangements are introduced to cope with this demographic glacier. Fortunately the ageing process in NSW, while pronounced, is less severe than in the southern States.

There has been considerable debate recently surrounding the rate of population growth in Sydney and more generally a 'population policy'. The forecasts in this report are based on moderate population growth using ABS Series I population forecasts.

The Series I forecasts assume a fertility rate of 1.75 births per woman and a net overseas migration of 110,000 per annum. The ABS forecasts the population of Greater Sydney to reach between 5.7 million people (low demand scenario) and 6.2 million people (high demand scenario) by 2051. The population of Sydney is currently 4.04 million.

4. Trade Forecasts – Unconstrained

Prospects for growth in containerised trade are bright, with strong domestic growth, continuing trade liberalisation and some increasing containerisation of commodities all contributing to future trade growth.

Trade forecasts are based on a disaggregated assessment of 42 major imported commodities and 42 major exported commodities. The forecasts reflect long term trends, averaging over short term fluctuations. For the purpose of port planning, three scenarios are provided for growth in NSW container traffic:

High demand: *the result of increased containerisation of bulk commodities (such as grain), rapid trade liberalisation and strong population growth in the Sydney region. NSW trade reaches 1.5 million TEU in 2008-09 and 2 million TEU in 2013-14.*

Medium demand: *based on average long term economic and demographic growth trends, world trade prospects and likely operational arrangements. NSW trade reaches 1.5 million TEU in 2009-10 and 2 million TEU in 2016-17.*

Low demand: *assumes no further containerisation of bulk commodities, limited population growth in the Sydney region and overall slower trade growth. NSW trade reaches 1.5 million TEU in 2011-12 and 2 million TEU in 2019-20.*

A further three scenarios have been prepared to allow for different possible distributions of total NSW container traffic between Port Botany, Port Jackson, Port Kembla and the Port of Newcastle. The scenarios have been prepared only for the purpose of contingency planning at Port Botany – these scenarios should not be relied upon for the purpose of evaluating any proposed developments at Newcastle and Port Kembla.

Scenario A – No containerised trade through Newcastle/Pt Kembla. *Port Botany handles all NSW containerised traffic, other than 50,000 TEU through Port Jackson. This reflects a continuation of the current situation, with Port Botany continuing to handle at least 95% of all NSW container traffic.*

Scenario B – Newcastle/Pt Kembla handle 100,000 TEU by 2010-11. *Port Jackson continues to handle 50,000 TEU and the remainder of NSW containers are handled through Port Botany. Beyond 2010-011, Newcastle/Pt Kembla grow to 150,000 TEU by 2024-25.*

Scenario C – Newcastle/Pt Kembla handle 250,000 TEU by 2010-11. *Port Jackson continues to handle 50,000 TEU and the remainder of NSW containers are handled through Port Botany. Beyond 2010-011, Newcastle/Pt Kembla grow to 380,000 TEU by 2024-25.*

4.1 Trade outlook

While trade slowed temporarily after the Olympics (1,016,401 TEU in 1999-00 falling slightly to 990,654 TEU in 2000-01), a steady recovery was underway in 2001-02 with containerised trade exceeding the 1 million TEU mark for the second year in history. Trade for 2002-03 (year to date) indicates a return to strong growth, although the drought and subsequent rebuilding of livestock numbers may dampen trade growth in the second half of 2002-03 financial year.

A key trend driving the historical 6.7% growth in container trade was the containerisation of commodities. During the 1980s and 1990s, a large number of commodities previously shipped in bulk started being shipped in containers. There are still some commodities currently in bulk that could transfer to containers (such as grain). However, containerisation of grain exports has been constrained recently due to problems with export permit approvals and difficulties in sourcing empty containers. As a result, future growth rates will be slightly lower than historical 6% to 7% annual growth rates. In the future, containerised growth will more closely align with growth rates in export and import tonnages.

Tables 4.1 and 4.3 provide a summary of the unconstrained TEU forecasts for Port Botany for financial years ending 30 June. This unconstrained forecast assumes sufficient capacity is made available to efficiently handle the growth without excessive queuing, congestion, double handling or delays.

Some of the high growth in Tables 4.1 to 4.3 in 2002-03 and 2004-05 is due to around 50,000 TEU in containerised trade expected to transfer from Port Jackson to Port Botany over the next few years.

The growth in Port Botany containers (under scenario A) over the next few decades is expected to be robust: 4.0% per annum in the low demand scenario, 4.8% per annum in the medium demand scenario and 5.6% in the high demand scenario. It should be stressed that these long term growths are expected to be achieved on average over several years. Growth in individual years may vary due to short term issues (such as a war in Iraq and recovery from drought).

Under Scenario B and Scenario C, where Newcastle/Pt Kembla service some NSW container traffic, Port Botany traffic will grow in the range 3.2% to 5.4% per annum up to 2024-25, depending on the particular combination of scenario.

Table 4.1 Port Botany Containerised Forecasts – Scenario A

No significant volumes of trade through Newcastle/Port Kembla

Port scenario A	History			Short Term Forecast			Long Term Forecast				Full period
Year	**1999-00**	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2009-10**	**2014-15**	**2019-20**	**2024-25**	**growth**
TEU											
Low growth scenario	916,400	890,654	919,342	993,080	1,065,755	1,131,616	1,436,404	1,700,303	1,998,804	2,273,585	
Medium scenario	916,400	890,654	919,342	1,002,320	1,091,319	1,166,096	1,539,672	1,893,343	2,306,716	2,716,337	
High growth scenario	916,400	890,654	919,342	1,015,900	1,110,619	1,201,400	1,648,456	2,103,743	2,653,988	3,233,041	
Annual growth							**Growth over 5 year period**				
Low growth scenario	17.5%	-2.8%	3.2%	8.0%	7.3%	6.2%	4.9%p.a.	3.4%p.a.	3.3%p.a.	2.6%p.a.	4.0%p.a.
Medium scenario	17.5%	-2.8%	3.2%	9.0%	8.9%	6.9%	5.7%p.a.	4.2%p.a.	4.0%p.a.	3.3%p.a.	4.8%p.a.
High growth scenario	17.5%	-2.8%	3.2%	10.5%	9.3%	8.2%	6.5%p.a.	5.0%p.a.	4.8%p.a.	4.0%p.a.	5.6%p.a.

Table 4.2 Port Botany Containerised Forecasts – Scenario B

Newcastle/Port Kembla handle 100,000 TEU by 2010-11

Port scenario B	History			Short Term Forecast			Long Term Forecast				Full period
Year	**1999-00**	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2009-10**	**2014-15**	**2019-20**	**2024-25**	**growth**
TEU											
Low growth scenario	916,400	890,654	919,342	993,080	1,065,755	1,131,616	1,356,404	1,585,872	1,864,304	2,120,525	
Medium scenario	916,400	890,654	919,342	1,002,320	1,091,319	1,166,096	1,459,672	1,778,912	2,172,216	2,563,277	
High growth scenario	916,400	890,654	919,342	1,015,900	1,110,619	1,201,400	1,568,456	1,989,312	2,519,488	3,079,981	
Annual growth							**Growth over 5 year period**				
Low growth scenario	17.5%	-2.8%	3.2%	8.0%	7.3%	6.2%	3.7%p.a.	3.2%p.a.	3.3%p.a.	2.6%p.a.	3.7%p.a.
Medium scenario	17.5%	-2.8%	3.2%	9.0%	8.9%	6.9%	4.6%p.a.	4.0%p.a.	4.1%p.a.	3.4%p.a.	4.6%p.a.
High growth scenario	17.5%	-2.8%	3.2%	10.5%	9.3%	8.2%	5.5%p.a.	4.9%p.a.	4.8%p.a.	4.1%p.a.	5.4%p.a.

Table 4.3 Port Botany Containerised Forecasts – Scenario C

Newcastle/Port Kembla handle 250,000 TEU by 2010-11

Port scenario C	History			Short Term Forecast			Long Term Forecast				Full period
Year	**1999-00**	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**	**2009-10**	**2014-15**	**2019-20**	**2024-25**	**growth**
TEU											
Low growth scenario	916,400	890,654	919,342	993,080	1,040,755	1,081,616	1,236,404	1,414,226	1,662,553	1,890,936	
Medium scenario	916,400	890,654	919,342	1,002,320	1,066,319	1,116,096	1,339,672	1,607,266	1,970,465	2,333,688	
High growth scenario	916,400	890,654	919,342	1,015,900	1,085,619	1,151,400	1,448,456	1,817,666	2,317,737	2,850,392	
Annual growth							**Growth over 5 year period**				
Low growth scenario	17.5%	-2.8%	3.2%	8.0%	4.8%	3.9%	2.7%p.a.	2.7%p.a.	3.3%p.a.	2.6%p.a.	3.2%p.a.
Medium scenario	17.5%	-2.8%	3.2%	9.0%	6.4%	4.7%	3.7%p.a.	3.7%p.a.	4.2%p.a.	3.4%p.a.	4.1%p.a.
High growth scenario	17.5%	-2.8%	3.2%	10.5%	6.9%	6.1%	4.7%p.a.	4.6%p.a.	5.0%p.a.	4.2%p.a.	5.0%p.a.

Figures 4.1 to 4.3 summarise the TEU forecasts for Port Botany corresponding to the above tables. If Newcastle/Port Kembla service some NSW containers, it causes a brief pause in growth at Port Botany.

The historical data includes 77,000 TEU in coastal trade and transhipment. This component of trade grows to around 200,000 TEU by 2024-25. The remainder is international trade to and from NSW.

The low growth scenario assumes low population growth and no further containerisation of bulk goods (such as grain). The high scenario is based on an assumption of strong economic growth (with immigration and increased labour force participation to offset the ageing

population), extensive trade liberalisation (such as a free trade agreement with the USA) and increased containerisation of wheat and other bulk goods. The medium scenario reflects moderate assumptions about population growth, trade liberalisation and containerisation.

Figure 4.1 TEU Forecasts – Scenario A

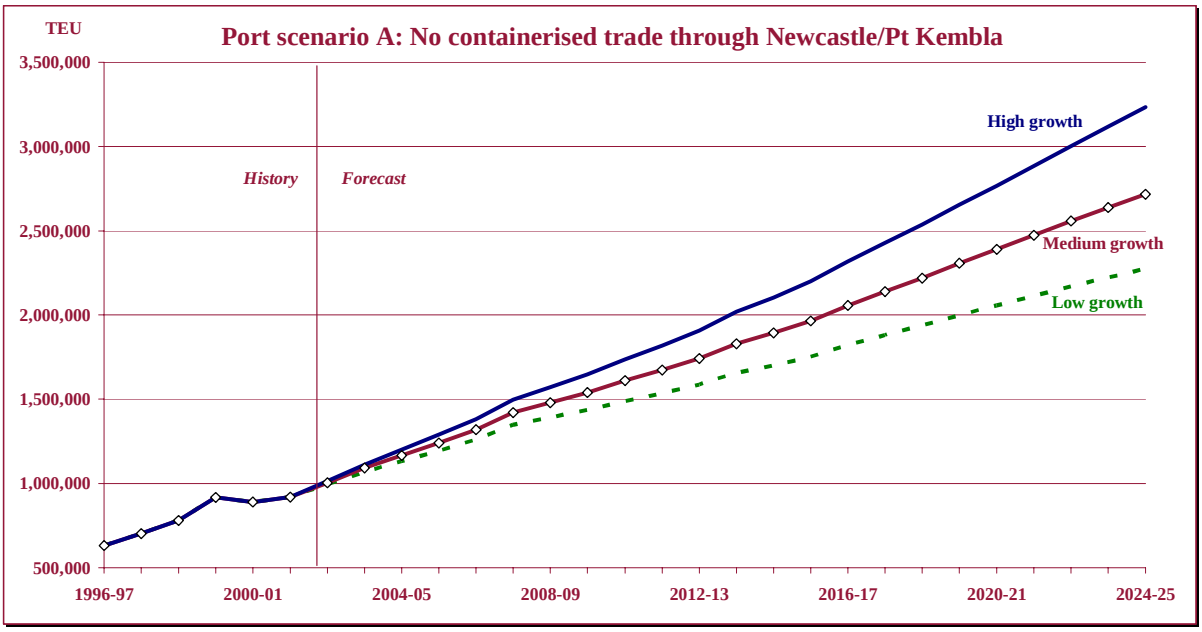


Figure 4.2 TEU Forecasts – Scenario B

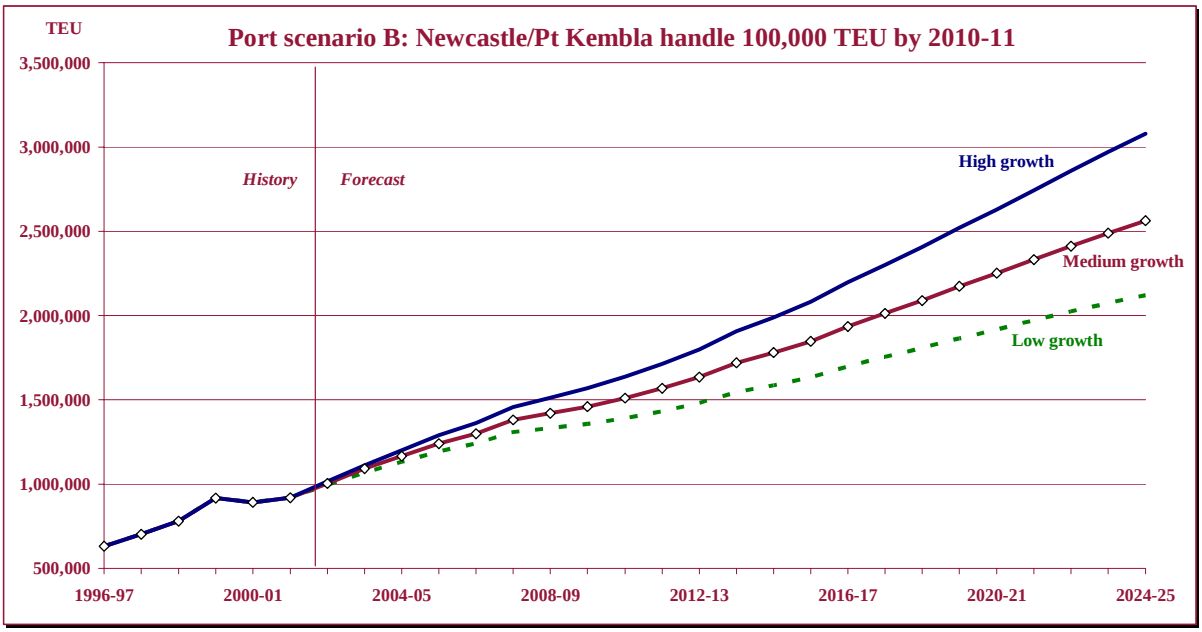
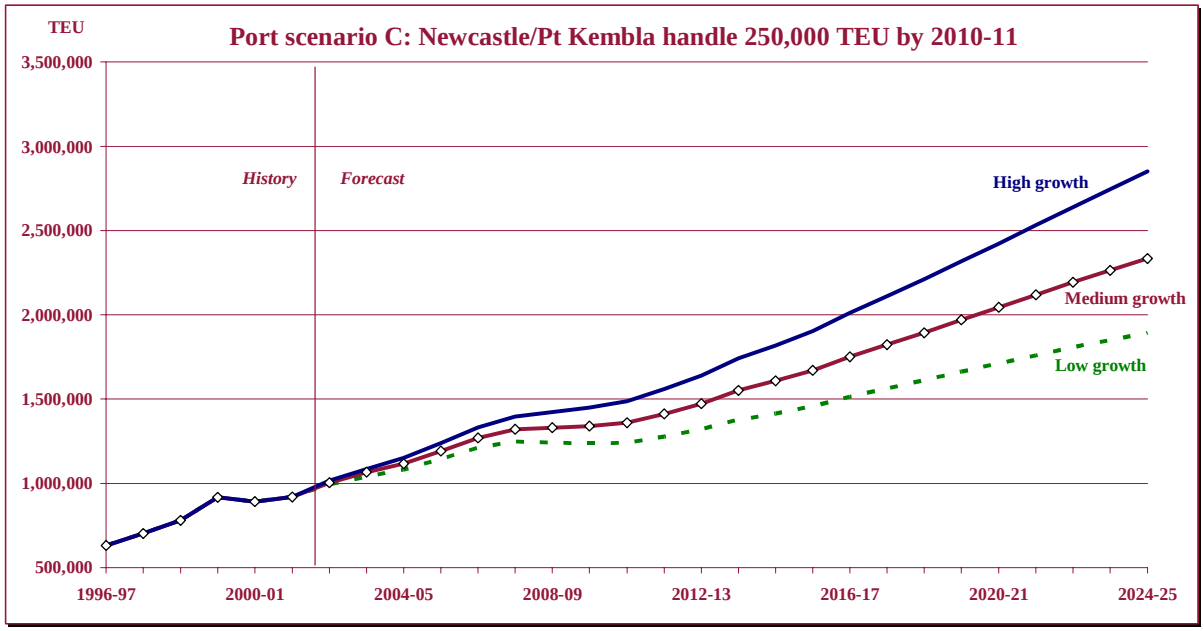


Figure 4.3 TEU Forecasts – Scenario C



4.2 Comparison with Other Forecasts

There are several other sources of container trade forecasts available. The United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) forecast regional growth of 5.3% for 2000 to 2010. This includes growth from emerging markets such as China, so is not directly relevant to Sydney, although China (which now includes Hong Kong) is Sydney's largest trading partner.

The Bureau of Transport and Regional Economics' September 2002 issue of Waterline (number 32) forecasts Australia-wide growth in container trade of 5% per annum over the period 2001-02 to 2010-11.

These alternative forecasts are broadly consistent with the container trade growth scenarios developed above.

5. Container Port Capacity Analysis

Port capacity is dependent on a number of parameters, including stevedore productivity, shipping patterns, technology and operational parameters. The assessment of capacity incorporates detailed simulation modelling of ship queuing based on forecasts of average vessel sizes and cargo exchanges by Maunsell and Drewry. The capacity analysis also considers a range of factors including crane rates, crane intensity, hours at berth with no labour allocated, the proportion of 40 foot containers, peaking factors and market share imbalances between the stevedores.

However, most of these productivity parameters are beyond the direct control of the port owner. In planning the scope and timing of future developments, the port owner should therefore consider the range of likely outcomes and the consequences of planning based on each outcome. To assist in planning, future capacity has been forecast using three scenarios of productivity improvement:

No productivity improvement scenario: *assumes stevedore productivity continues at the quite strong levels achieved during 2002, without further improvement. Other operational parameters remain at 2002 levels. Capacity of the existing facilities remains at 1.3 million TEU throughout the planning period.*

Modest productivity improvement scenario: *allows for further improvements over 2002, based on investments in new equipment currently being undertaken or planned by stevedores and a modest change in other operational parameters over time. Capacity of the existing facilities increases to 1.7 million TEU by 2014-15.*

High productivity improvement scenario: *approximates to the appraisal of capacity by the stevedores themselves and results in a generally optimistic "world's best terminal" productivity view of capacity. Capacity of the existing facilities increases to 2.1 million TEU by 2014-15.*

The no productivity improvement scenario is included in the modelling for reference purposes, but is at the very low end of the range of future productivity.

The high scenario involves very rapid increases in productivity (and thus capacity). Given the long lead times for construction of major port infrastructure and the fact that the port owner has no direct control over achieving high productivity outcomes, it may be imprudent to use this scenario as a basis for port planning.

It is therefore suggested that the modest productivity improvement scenario is a reasonable basis for port capacity planning.

5.1 Capacity Issues

Port capacity is an economic rather than an absolute concept – it depends largely on the extent of congestion and queues the shipping lines, importers and exporters are willing to tolerate, compared with using the next best alternative port.

Some aspects of port capacity (such as the number of berths and hectares of terminal area) are readily measurable and do not change over time, unless substantial infrastructure investment occurs. However, many aspects of port capacity (such as productivity, crane intensity and container stacking height) change continually over time. Consequently, port capacity is not a precise number; it can vary considerably depending on the combination of assumptions used and the existence of alternatives. Hence, the Port Capacity Model jointly developed by Access Economics and Maunsell, for Sydney Ports allows testing of a range of capacity scenarios.

In theory, a set of assumptions on berths, productivity, crane intensity, etc can be multiplied by the number of working hours in a year to calculate a capacity figure. However, long before this **theoretical capacity** is reached, the users of the port will be experiencing delays (particularly during peak season and peak day of the week). As port throughput increases towards the theoretical capacity, ships are queuing for a vacant berth, containers are double handled, trucks are queuing outside the terminal and exporters/importers are incurring delays in the movement of their cargo. These congestion factors increase exponentially as throughput approaches 100% of theoretical capacity. Long before capacity utilisation of 100% is reached it becomes no longer economically justifiable to trade additional containers of cargo through a particular port. Hence the theoretical capacity limit can never be reached.

Given a theoretical capacity limit, a port will be able to attain a **maximum feasible throughput,** a level of annual throughput somewhat below theoretical capacity and dependent on the economically acceptable level of delays, double handling and other congestion costs. This is usually expressed in terms of the annual number of TEU (twenty-foot equivalent units) handled.

The maximum feasible throughput does not occur at some known percentage (like, say 75%) of the theoretical capacity. The exact point where it ceases to be economically worthwhile to trade any additional containers of cargo depends on the balance of many factors, including:

- the number of berths available (for example, a port with 8 container berths has more flexibility, so can achieve a higher percentage of theoretical capacity than a port with 4 container berths);

- the price sensitivity of exporters and importers (their willingness to pay waiting time and double handling charges and suffer delays in processing their cargo), which depends in part on the availability of alternatives;
- the extent to which alternative transport options are available (such as competing ports and the efficiency and price of land transport links); and,
- the extent to which congestion costs can be ameliorated using scheduling, booking and other operational technology.

The exact point where throughput will hit the maximum feasible level depends on the prevailing combination of the above factors. Historical experience suggests for a terminal arrangement such as exists at Port Botany that when throughput reaches around 60% to 70% of theoretical capacity it becomes economically unjustifiable to conduct any additional trade through the port. If there is an alternative port nearby offering a competitive transport chain, throughput at the congested port might be limited to 60% of theoretical capacity. However, if the congested port can introduce better scheduling/booking systems, the nearest competing port is an expensive land bridge away and exporters/importers have a strong preference for the frequent services available at the congested port, throughput might be able to reach 70% of theoretical capacity.

The modelling approach in this study combines the above factors in order to determine the upper limit of port throughput, given a theoretical capacity.

This approach to modelling port capacity ensures the complex interactions between capacity, throughput and competing ports are taken into account.

5.2 Methodology

The capacity calculations in this study are based on port capacity measurement methods developed by Maunsell. Forecasting the future capacity of the Port Botany terminals takes into account a range of assumptions regarding future ship size, limiting berth occupancy and operational parameters, based on recent work undertaken by Maunsell and Drewry, (specifically for Port Botany), in respect of ship size and by Maunsell concerning ship queuing and limiting occupancy. Productivity and other operational parameters have been determined following a review of published data (BTRE Waterline) and consultation with Sydney Ports Corporation and terminal operators.

Maunsell's capacity estimates are integrated with models of economic behaviour and trade forecasts developed by Access Economics and land transport cost estimates by Maunsell in order to determine the economic capacity of the port.

The amount of congestion experienced at a port is related to the overall level of capacity, given assumptions regarding productivity and the throughput of that port. Congestion can occur in any number of potential bottlenecks in the transport system. By identifying these bottlenecks, we can determine where unacceptable delays first begin to limit overall throughput.

For seaports, throughput may be limited by:

- channel capacity: the daily number of vessel movements allowable;
- berth capacity: the maximum feasible amount of cargo which can be handled over the available berths;
- area capacity: the maximum feasible amount of cargo which can be handled through the terminal areas behind the berths; and
- road and rail capacity: the maximum feasible amount of cargo which can be handled through the road/rail systems and intermodal links.

This report focuses on container terminal capacity only and assumes that channel access capacity will be increased if/when this becomes a constraint in future. Channel capacity could potentially become a constraint at high levels of trade, but not for the foreseeable future, given the relatively short distance of the Port Botany channel.

Road and rail transport are the subject of a separate report commissioned by Sydney Ports Corporation. Channel, berth and area capacity are discussed in this Chapter.

5.3 Container Port Facilities

Table 5.1 lists the berths currently available for containerised trade in Sydney. Table 5.2 lists the proposed developments for Sydney's ports, with P&O PBCT developing land it current leases but which is currently undeveloped, Patrick gaining additional terminal area and the new terminal development proposed by SPC in Port Botany. This additional capacity is compared against a baseline of no change in available land, other than the undeveloped 5.1 Ha already leased by P&O PBCT and an additional 2.2Ha taken up by Patrick.

Table 5.1 Sydney Container and Multi-Purpose Terminals

Terminal, as at Nov 2002	Use	Berth length (m)	Terminal area (Ha)
P&O PBCT Botany terminal	Container	936	33.5
Patrick Botany terminal	Container	1006	43.8
Darling Harbour 3	Multi-purpose	229	16.7
Darling Harbour 4 to 7	Multi-purpose	717	
White Bay 3 – 6	Multi-purpose	950	13.3

Source: Sydney Ports Corporation

Table 5.2 Proposed changes in capacity for Sydney Ports

Dock	Timing	Additional Berth Lengths (m)	Additional Terminal (Ha)
Existing container terminal	2004-05	..	+7.3[(1)]
Proposed development	To be determined	1,700	+62.0[(2)]

Source: Sydney Ports Corporation

(1) P&O development of 5.1ha and Patrick Redevelopment of 2.2ha

(2) Additional land by reclamation

5.4 Capacity Scenarios

Three productivity scenarios are used to test the effect of future productivity improvements:

1. **No Productivity** scenario assumes stevedore productivity continues at the quite strong levels achieved during 2002, without further improvement: other operational parameters remain at 2002 levels.
2. **Modest Productivity** allows for further improvements over 2002 levels, based on investments in new equipment currently being undertaken by stevedores; and a modest change in other operational parameters over time.
3. **High Productivity** approximates to the appraisal of capacity by the stevedores themselves.

The no productivity scenario is included in the modelling for reference purposes, but is not a realistic basis for planning. The modest productivity scenario is considered to be the most prudent 'base case' for planning.

5.4.1 Measuring Capacity

Berth capacity is dependent upon a range of factors as discussed in the follow subheadings.

5.4.1.1 Limiting berth occupancy

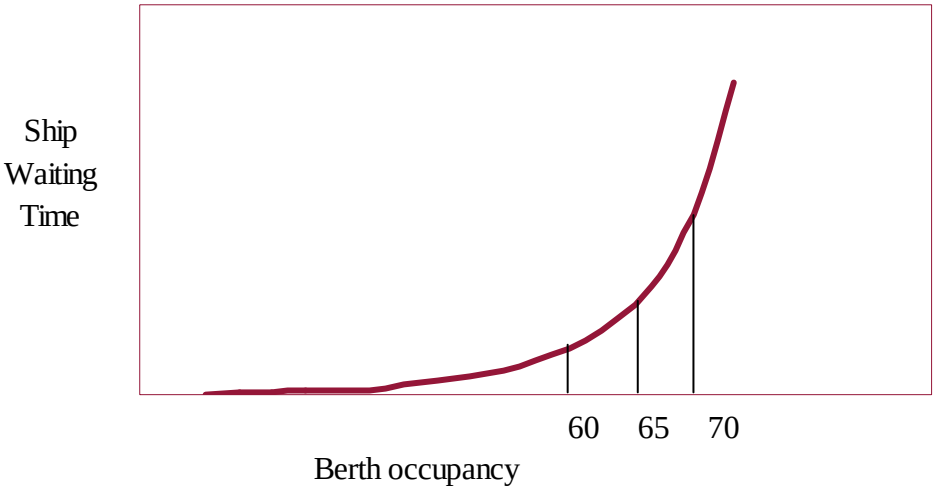
This is an economic concept rather than an exact parameter. As noted earlier, the modelling approach taken in this study calculates the point where throughput will reach a limit given the economic behaviour of exporters and importers. It depends on the degree of scheduling vs randomness of vessel arrivals and acceptable levels of ship waiting time. In economic terms, terminal capacity is defined as the level of throughput at which the aggregate cost of congestion has reached a limit beyond which it is no longer economically justifiable to trade additional containers of cargo. This indicates that the provision of additional facilities may be the most economically efficient option (providing construction costs do not outweigh the saving in congestion costs). Of course in commercial terms where terminals or ports are competing for cargo, "acceptable" ship waiting times are generally lower than in the absence of competition. Competition provides alternatives and the availability of alternatives reduces the level of congestion businesses are willing to accept.

For a typical semi-scheduled inter arrival distribution, the limiting berth occupancy (the point at which congestion costs and ship waiting time becomes prohibitively expensive) is usually in the range of 60% to 65% for a 3-4 berth terminal. The higher the number of berths, the greater the flexibility to manage a given number of vessels (a berth become vacant more frequently when there is a higher number of berths, so the average waiting time decreases, hence congestions costs are lower for a given rate of occupancy).

It may be imagined that with an increasing trend towards fixed day schedules at Australian container ports it would be reasonable to expect that higher occupancies could be obtainable in the future, say up to 70% or even 75% for a 5 berth terminal. Since the selection of economically acceptable berth occupancy is a critical input to capacity modelling, Maunsell was commissioned by Sydney Ports Corporation to model the relationship between ship queuing and berth occupancy for the Sydney Container Terminals.

Simulation modelling based on actual arrival patterns has been developed by Maunsell and applied to each of the productivity scenarios referred to above for the forecast container throughput. The model indicates that ship waiting times at Port Botany (due to berth congestion) starts to increase steeply above berth occupancy levels of 60% to 65%. The relationship between ship waiting time and berth occupancy is shown typographically below.

Figure 5.1 Illustration of Congestion Costs (Ship Waiting Time)



The important point is that waiting time per vessel increases very rapidly above 65% such that average waiting time may double for a modest increase in berth occupancy.

Currently ship waiting is negligible and the terminals operate with occupancies in the range 35-50%. There is a high degree of scheduling of vessel arrivals with fixed berthing windows. Waiting time to access these berthing windows will generally be unacceptable to shipping lines if the port is to remain competitive, therefore a limiting berth occupancy of 65% has been adopted for purposes of estimating capacity.

5.4.1.2 Vessel length

The distribution of length overall (LOA) of vessel arrivals affect the *effective* rather than *nominal* number of berths at a terminal ie. the actual average no of ships which can be "fitted in" to the total berth length of a terminal at any given time. This in turn affects the limiting berth occupancy for the terminal. The average LOA of vessels calling at the Port Botany terminals has increased from 195m (1997) to 203m (2001).

Forecasts of future LOA (from Drewry) and the Effective No. of Berths (Maunsell) at the Botany terminal on the basis of LOA forecasts are shown in Table 5.3 below.

Table 5.3 Forecast of future LOA and Effective No. of Berths (at existing terminals)

	2004-05	2014-15	2024-25
Modest Productivity			
Mean LOA	209	212	243
Effective No. Berths	7.9	7.8	6.9
High Productivity			
Mean LOA	209	217	253
Effective No. Berths	7.9	7.6	6.7

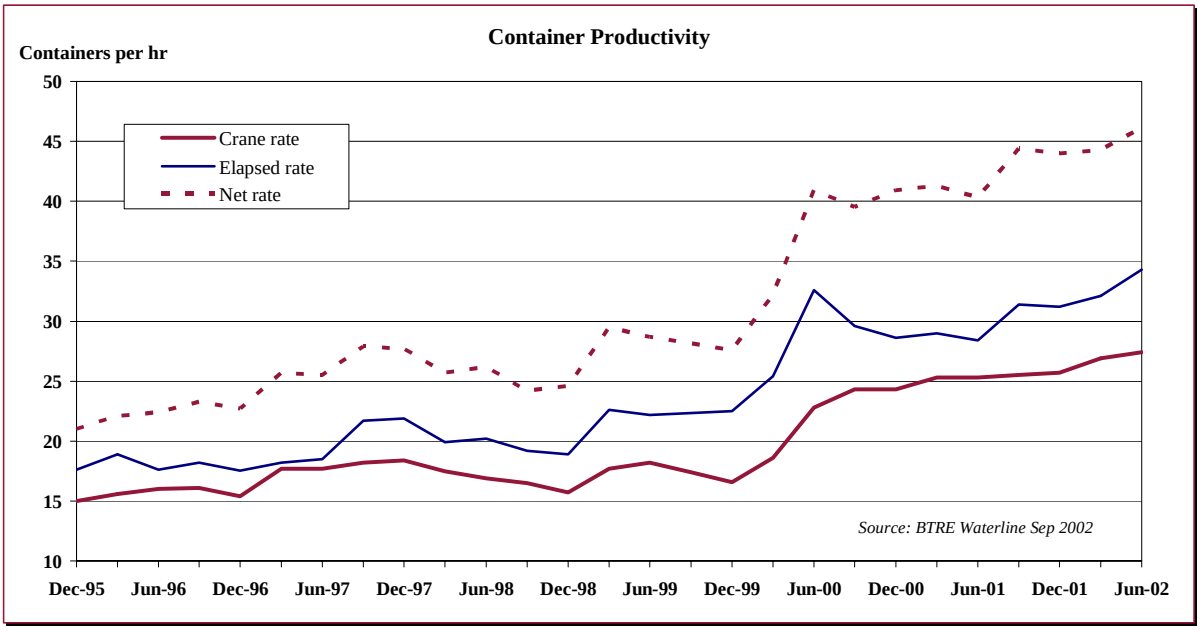
5.4.1.3 Crane rate

This is the rate at which boxes are moved by each crane between ship and shore. Historically these have been low in Australian terminals by international standards (below 20 per hour) but have increased rapidly and significantly to about 27 lifts per hour (average of both operators, as at June 2002) following the 1998 Waterfront Dispute. Higher average rates for Port Botany, in excess of 30 TEU per hour, may be sustainable in the future.

In this report, the crane rate refers to lifts per hour while the ship is being worked. Non-working hours are added in separately to derive the total time along side for a vessel. The lift rate is total number of lifts, not TEU. The ratio of TEU per lift is accounted for below.

Figure 5.1 indicates the improvements in container productivity over the last 8 years have increased significantly.

Figure 5.2 Productivity improvements



Definitions:

Crane Rate *in containers per hour: container lifts per crane divided by number of hours the ship is being worked (**excludes** time taken for scheduled breaks, equipment breakdowns, bad weather, industrial stoppages and other such delays). The crane rate in TEU per hour (not shown) takes into account the ratio of TEU/containers.*

Net rate *(or ship rate): is the crane rate multiplied by the crane intensity (average cranes per ship)*

Elapsed rate*: total containers handled per ship divided by number of hours the ship is available to be worked (**includes** time taken for scheduled breaks and equipment breakdowns, but excludes delays due to port-wide industrial stoppages). Incorporates crane intensity (cranes per ship) so divide by crane intensity to get a per-crane elapsed rate.*

5.4.1.4 Crane intensity

The number of cranes applied to each vessel in the Sydney terminals is, on average, around 1.6. In future this is likely to increase up to 1.8 or 1.9 as operators add more cranes, though there is a practical limit to the number of cranes able to work any given vessel imposed by the vessel length and configuration.

5.4.1.5 Ratio of TEU/containers

Terminal Capacity is commonly measured in terms of annual number of TEU. The berth and terminal capacity measured in this way is clearly dependent on the ratio of the no. of TEU to boxes, ie the relative proportions of 20' and 40' boxes. The proportion of 40' boxes at Sydney has increased over the past 5 years and currently there are 1.35 TEU for every crane lift compared with 1.29 in 1998. This is expected to increase further over time up to about 1.50 and will have the effect of improving efficiency throughout the transport chain without any major changes in management or work practices.

5.4.1.6 Non-working time

Non-working time while a ship is alongside has two components as follows:

- Time when the ship is at berth and no labour allocated. From analysis of SPC and BTRE "Waterline" statistics, this currently amounts to about 8.25 hours per vessel call at the Port Botany terminals (out of an average time alongside (elapsed time) of 32.85 hours. This indicates the situations where there is little demand for the night labour shift and a ship berthing at (say) 04:00 may be at the berth for 3 or 4 hours until labour is allocated. In future, as trade increases, and 24 hour ship working becomes the norm, this non-working time will decrease significantly – we have assumed down to 2 hours in the high productivity case.
- Elapsed time not worked – this is an indicator recorded by BTRE in Waterline. It allows for time when labour is "working the ship" but when containers are not being handled.

  This may include time spent in removing and replacing hatches, lashing and unlashing, as well as time due to bad weather, equipment failure, industrial dispute, shift change, rest breaks or a vessel delaying its departure to await delivery to the terminal of export boxes.

  This non-working factor as defined by BTRE effectively represents the difference between the ship rate (Crane Rate x Crane Intensity) and the elapsed labour rate (number of containers handled divided by elapsed labour hours = time labour allocated to work the ship).

5.4.1.7 Average Cargo Exchange

This is the average number of containers handled (discharged and loaded) per vessel call. It is calculated by dividing the total TEU throughput per annum by the no. of ship calls per annum.

Other things being equal, an increase in average cargo exchange will tend to increase berth capacity as the proportion of ship working time to total vessel time alongside will increase with an increase in the average exchange. Further, the higher the ratio of average cargo exchange : ship TEU capacity, generally the less "sorting" is required and the more efficient the discharge. The average cargo exchange has increased from 750 TEU (1997) to 992 TEU (2001) to 1,133 (2002). We expect this to continue to increase in future up to about 1,700 TEU by 2025 (modest productivity scenario) or 2,000 TEU (high productivity scenario) per vessel in the long term.

5.4.1.8 No. of restows

At some ports there is a need for the vessel to 'sort' boxes involving movement of boxes to the quay and back to the ship. This consumes crane time and reduces the nominal "elapsed"

handling rate. According to terminal operators, the percentage of restows at Sydney is negligible.

These factors in combination can be used to derive an effective berth capacity figure expressed in No. of TEU per annum as discussed below.

5.4.2 Terminal Area Capacity

5.4.2.1 Area capacity parameters

In many ports it is ***area capacity*** which limits throughput rather than ***berth capacity***.

Terminal area capacity, like berth capacity, is a dynamic concept, which can change very significantly due to operational and technological changes. Generally the trend worldwide is towards increased terminal area capacity per hectare. Key factors affecting terminal area capacity are:

- cargo dwell time in terminal - varies for imports and exports;
- stack height - varies for imports, exports, empties;
- no. of ground slots; and,
- slot utilisation - depends on the degree of selectivity (box sorting) required and level of terminal operations technology in use.

In simple terms, the capacity is estimated as follows:

$$\text{Annual throughput capacity} = \frac{\text{No. of Ground Slots x Ave Stack Height x 363}}{\text{Ave Dwell Time (Days) x Peaking Factor}}$$

Terminal operators have three basic options in terms of increasing terminal area capacity, namely:

- investing in terminal operating equipment and systems to allow higher stacking and greater slot utilisation and/or increasing the number of ground slots per unit area of terminal;
- lease more land (if available); and
- "block run-outs" of boxes to nearby container depots.

Each of these options is considered briefly below.

5.4.2.2 Invest in terminal operating equipment and systems

There is a growing emphasis in container ports worldwide on optimising human and technical resources employed.

This has resulted in significant increases in capacity of existing terminals beyond levels previously thought practical or possible. A striking example of this has been at Hong Kong

where the delay in development of Terminal 9 required capacity increases at existing terminals CT1 - CT8 from 7.2 million TEU (1991) to 9.2 million TEU (1994) to 11.5 million TEU (1998). The major operators HIT and MTL invested heavily in yard handling equipment and operational systems to increase capacity to levels up to 550,000 TEU/berth/15ha terminal. These are the highest asset utilisation rates at any port in the world.

Whilst Hong Kong is an extreme example of what can be achieved most modern ports will now include, or will introduce over the next few years:

- computer based ship and yard planning systems;
- GPS on terminal equipment;
- yard slot optimisation systems;
- automatic gate readers; and
- computerised Vehicle Booking System.

These systems provide:

- greater throughput capacity;
- reduced labour costs;
- improved performance;
- reduced delays and human errors; and
- reduced truck queues.

5.4.2.3 Lease more land (if available)

There is the opportunity to increase terminal area at the Port Botany terminals by take-up of vacant land (5.1ha at P&0 and 2.2ha at Patrick)

5.4.2.4 "Block run-outs" of boxes to nearby container depots

In peak times, terminals in Sydney do "block run-outs" of boxes to nearby container depots which effectively act as buffer storage for the port terminals.

In addition, there is the opportunity to move large numbers of boxes quickly through terminals by rail movements to inland depots.

The effect is to reduce dwell time and thereby increase capacity. We have assumed about 15% of containers are moved through the terminal within 24 hours. This could be increased over time, for example, using inland container depots and rail shuttles if terminal area congestion is experienced. However, increasing concerns over port security, customs and quarantine could affect the extent to which this is feasible.

Increased security screening of containers has become necessary following the terrorist attacks in the United States and Bali. This may impact on the capacity of the port, by increasing the length of time containers will remain on the docks (hence the additional terminal area occupied due to a long dwell time) before being cleared.

At this stage, no allowance for this has been included in the capacity, but it may be necessary to review the capacity of the port in the future if Customs and AQIS processes start to cause noticeable delays in transporting containers.

5.4.2.5 Port Comparison

A comparison of the intensity of Terminal Area utilisation (in TEU/hectare) at the Port Botany terminals compared with some other terminals around the world is shown in Table 5.4, for reference. The terminals comparable to Port Botany currently operate in the range 10,000 TEU/ha to 20,000 TEU/ha. However intensity of utilisation is expected to increase over time.

Table 5.4 Container terminal area utilisation comparisons

Port/Terminal	Terminal Area ha	2001 Throughput ('000 TEU)	TEU per hectre p.a.
Rotterdam			
ECT Terminal*	255	3306	12,965
Felixstowe			
Landguard/Trinity	197	2,800	14,228
Southampton			
SCT	74	1,164	15,730
Thamesport			
Thamesport*	24	492	20,500
Gioia Tauro			
Medcentre Terminal	95	2,488	26,189
Vancover			
Vanterm	31	364	11,742
Manila			
MICT	94	960	10,207
Port Botany**			
Both Terminals	77	919	11,935

* Year 2000 Throughput
** Port Botany data is 2001-02

Table 5.6 shows three different scenarios for variation of terminal area capacity parameters. The effect of varying the slot density (a measure of average stack height and ground slot utilisation) between 1.90 and 2.60 and gradually reducing the average dwell time of containers in the port terminals from 4 days to 3.4 days, is reflected in the terminal area capacity estimates shown at the foot of the table.

This contributes to the increase in terminal area capacity over time from about 1 million TEU (existing) to:

- 1.1 million TEU across the forecast period in the no productivity improvement scenario;
- 1.4 million TEU by 2004-05, increasing to 2.4 million TEU by 2024-25 in the modest productivity improvement scenario;
- 1.6 million TEU by 2004-05, increasing to 2.9 million TEU by 2024-25 in the high productivity improvement scenario;

5.4.3 Channel Capacity

The likely annual number of vessel calls to Port Botany has been estimated on the basis of continued trade forecasts to 2024-25 and assumptions about the average cargo exchange per vessel.

The estimates have been prepared for three different scenarios of future average cargo exchange, ie. the average total amount of cargo loaded and discharged on each vessel call. The three scenarios are:

No productivity: assuming the 2002 levels of average cargo exchange (1,133TEU) continues;

Modest productivity: assuming the 2002 levels of average cargo exchange increases up to 1,700 TEU by 2025;

High productivity: assuming substantial increases in average cargo exchange over time up to 2,000 TEU by 2025.

The estimates allow for increasing average cargo exchange in line with trade growth and likely trends in increasing vessel size.

Table 5.5 records the number of ship calls to Port Botany. SPC does not envisage that the expected number of vessel calls will cause channel capacity problems of any significant nature in the future. However changes to other marine operations maybe required to reduce queuing of container ships as traffic increases.

Table 5.5 Forecast ship calls to Port Botany

	History		No productivity		Moderate productivity		High productivity	
	1997-98	**2001-02**	**2014-15**	**2024-25**	**2014-15**	**2024-25**	**2014-15**	**2024-25**
P&O PBCT/ Patrick	975	810	1,756	2,718	1,372	1,812	1,243	1,540
BLB	140	165	150	181	151	187	151	187
Kurnell	139	128	149	180	150	186	150	186

Source: Sydney Ports Corporation (for History)

5.5 Terminal capacity

5.5.1 Global Trends - Container Terminal Capacity

There is a growing trend worldwide to increase throughput capacity of terminals by operational and technology improvements. The reasons for this will vary between ports and countries. However four common themes emerge:

1. the need to obtain greater utilisation of capital assets and hence greater profitability for owners and operators - this in turn has been driven by the increasing role of private sector companies in terminal operations worldwide;
2. lack of land and/or water space for new terminal development. It was noted earlier that port capacity is a variable concept and as capacity limits are approached, it provides an incentive to introduce new equipment and booking/management systems;
3. the high capital costs of new terminal development: where governments are increasingly looking to the private sector to fund development, the private sector naturally requires a reasonable return and risk sharing; and
4. increasing environmental awareness and concern which, particularly in developed countries; usually leads to long lead times and difficult environmental approval processes.

5.5.2 Capacity of Existing Port Botany Terminals

Table 5.6 shows the three different scenarios for variation of berth (and terminal) capacity parameters over time. Clearly the parameters may be combined in a large number of permutations. Three scenarios are considered here to demonstrate the very significant effect on capacity of varying these parameters and to provide an "envelope" of capacity potential for assessment of infrastructure requirements. Some of the parameters are directly under the terminal operators' control (eg. crane rate) and others are outside their control (eg. ratio of TEU/boxes).

Scenario 1 "No productivity improvement" assumes no change in the listed parameters over time. **Scenario 2 "Modest productivity improvement"** assumes a modest increase in productivity and a modest change in non-productivity parameters (eg. TEU exchange) for the Port Botany terminals. **Scenario 3 "High Productivity Improvement"** assumes a more significant increase in productivity and a more significant change in non-productivity parameters.

Combining these parameters results in an estimate of berth capacity in terms of TEU/berth and Total TEU for the Port Botany terminals. The analysis shows that:

- for the "Modest Productivity" scenario, berth capacity increases from 222,000 TEU/berth in 2004-05 to 306,000 TEU/berth by 2025;
- With "High Productivity Improvement", berth capacity increases from 247,000 TEU/berth in 2004 – 05 to 405,000 TEU/berth by 2024-25.

5.5.3 Overall Terminal Capacity

The limiting container terminal capacity at any point in time will be the lower of the berth and container terminal area estimates.

If land is available to increase yard capacity as required, berth capacity will be the ultimate limiting factor. However, terminal area capacity can be a binding constraint if there are limitations on land.

There is no direct correlation between the scenarios of berth capacity and area capacity shown in Table 5.6. That is, berth capacity could increase by increasing crane productivity without any change to the terminal area operation. As throughput increases, and capacity pressures begin to be experienced at either the berth or in the terminal area, operators will opt to add additional equipment, improve productivity, or introduce yard planning systems to avoid losing market share.

In the **Modest Productivity Scenario**, Terminal area utilisation expressed in annual TEU throughput per hectare will increase from 14,600 TEU/ha (2002):

- to 18,600 TEU/ha (2005);
- to 31,000 TEU/ha (2025).

In the **High Productivity Scenario**, utilisation will increase:

- to 21,000 TEU/ha by 2005;
- to 38,000 TEU/ha by 2025.

There is no reason why terminal area capacity cannot increase to levels which at least match berth capacity for the scenarios envisaged at Port Botany – note these estimates assume that

P&O PBCT take up their vacant 5.1 ha and that Patrick will increase their terminal area by 2.2ha by 2005.

In summary, port development should balance berth and terminal area capacity to avoid a major mismatch between terminal areas and berths. In the short term, terminal area capacity is a limiting factor in some productivity scenarios, however in the long term berth capacity is expected to be the limiting factor at Port Botany (see table 5.6). Hence, berth capacity is used as the main limiting factor in the following charts and tables depicting capacity and trade growth.

5.5.4 Market Share

Total container capacity for the Botany Terminals as a whole is dependent to some extent on the market share of each of the two operators and the degree to which there is re-allocation of waiting vessels at one terminal to another with additional berth space.

Where there is an imbalance of market share and a limited re-allocation of waiting vessels from one terminal operator to another then the capacity of the port as a whole may be reduced. For example, if Operator A has 60% market share and Operator B has 40%, then effective total port capacity would be less than if each operator had 50%,

If a third terminal is introduced at Port Botany in future, thereby increasing container capacity, then there may well be further imbalances in market share such that one terminal is at capacity with ships queuing whilst another has spare capacity with empty berths at any one time.

It follows that in this inter terminal competitive environment, additional capacity is likely to be required a little earlier than indicated by theoretical assessment of total port capacity. That said, constructing additional berths for stevedore "A" may be more difficult to justify if stevedore "B" has spare capacity.

For the purpose of planning total port capacity, the nominal total berth capacity of the two terminals added together is reduced by 15% in Table 5.6 to allow for imbalance in market share and to allow some contingency for peaking, seasonal factors and other uncertainty.

The Terminal Area capacity is similarly factored down to allow for imbalance of market share. The lower 10% reduction is applied to the area to recognise that area "peaks" can be more readily dealt with than berth peaks.

5.5.5 Multipurpose Terminals (Sydney Harbour)

An important factor in the assessment of total container port capacity is the number of containers handled at multi-purpose terminals in addition to those handled at pure container terminals. For example at the White Bay and Darling Harbour Terminals in Sydney Harbour,

containerised cargo amounts to about half of the total cargo handled. Whilst some services prefer these terminals for a range of reasons, both P&O and Patrick make use of their multi-purpose terminals, to suit shipping line preferences.

We have assumed that container traffic in Sydney Harbour remains at about 50,000 TEU/yr.

5.5.6 Summary – Botany Container Terminal Capacity

The results of applying the various parameters to each of the three scenarios for the existing terminals are shown in Tables 5.6 and 5.7.

Table 5.6 provides an estimate of the Botany Terminals with no additional development (other than some the small parcels of undeveloped terminal area already available).

In summary the capacity scenarios for planning purposes are proposed as follows:

Modest Productivity Scenario: 1.5 million TEU/annum (2004-05) increasing to 1.8 million TEU/annum (2024-25)

High Productivity Scenario: 1.7 million/annum (2004-05) increasing to 2.3 million TEU/annum (2024-25).

In both scenarios, berth capacity rather than area capacity becomes the issue limiting capacity in the long term. It is recognised that one or both of the terminal operators may well be able to handle well in excess of 1 million TEU through their respective facilities. For example, we understand that Patrick currently estimates its terminal capacity at 1.3 million TEU per annum following its current redevelopment program. Thus the theoretical terminal capacity for both terminals calculated separately may well be in the order of 2.5 million TEU per annum. However the levels of ship queuing at these throughputs are likely to become unacceptable and result in loss of business to Sydney Ports. Ship queuing can be beneficial to terminal operators (at least in the short term), allowing them to keep their facilities running at high levels of utilisation. However, this creates a bottleneck in the overall supply chain, which imposes additional costs on shipping lines, importers and exporters and constrains overall trade.

5.5.7 Capacity with Future Development

Table 5.7 provides an estimate of the Port Botany Terminals with the proposed development. The capacity is estimated at:

3.4 million TEU/annum by 2024-25 for the Modest Productivity Scenario; and

4.3 million TEU/annum by 2024-25 for the High Productivity Scenario.

The no productivity improvement scenario is included in the modelling for reference purposes, but is at the very low end of the range of future productivity.

The high scenario involves very rapid increases in productivity (and thus capacity). Given the long lead times for construction of major port infrastructure and the fact that the port owner has no direct control over achieving high productivity outcomes, it may be imprudent to use this scenario as a basis for port planning.

It is therefore suggested that the modest productivity improvement scenario is a reasonable basis for port capacity planning.

Note: tables 5.6 and 5.7 shows snapshots of capacity at 10 year intervals with and without the proposed developments. Optimising the staging and timing of the development is beyond the scope of this study.

Table 5.6 Port Botany capacity scenarios with current infrastructure – no additional berth or terminal area

PRODUCTIVITY SCENARIOS CONTAINER TERMINALS	HISTORICAL RESULTS			Scenario 1 No Productivity Improvement			Scenario 2 Modest Productivity			Scenario 3 High Productivity		
	1997-98	2000-01	2001-02	2004-05	2014-15	2024-25	2004-05	2014-15	2024-25	2004-05	2014-15	2024-25
CAPACITY PARAMETERS *												
Infrastructure												
Effective No. Berths*****	8.6	8.0	8.0	8.0	8.0	8.0	7.9	7.8	6.9	7.9	7.6	6.7
Terminal Area (ha)	77.3	77.3	77.3	84.6	84.6	84.6	84.6	84.6	84.6	84.6	84.6	84.6
Average Vessel Length (meters)	195	203	203	203	203	203	209	212	243	209	217	253
Berth Capacity												
Ave Cargo Exchange (TEU)	750	992	1,133	1,133	1,133	1,133	1,200	1,450	1,700	1,200	1,600	2,000
Ratio TEU: Containers	1.29	1.37	1.35	1.35	1.35	1.35	1.40	1.42	1.45	1.40	1.45	1.50
Average Cargo Exchange-Containers	581	724	841	841	841	841	857	1,021	1,172	857	1,103	1,333
Crane Rate(Containers/hr)*	17.8	24.8	27.4	27.4	27.4	27.4	28.0	29.0	30.0	29.0	31.0	33.0
Crane Intensity	1.51	1.63	1.68	1.68	1.68	1.68	1.68	1.70	1.80	1.70	1.80	1.90
Ship Rate*-Containers/Hr	26.88	40.50	46.10	46.10	46.10	46.10	47.11	49.30	54.00	49.30	55.80	62.70
Elapsed Labour Rate(containers/hr)*	20.93	28.76	34.11	34.11	34.11	34.11	34.86	36.98	42.66	36.48	43.52	51.41
Elapsed Labour Time-Hours	27.78	25.18	24.65	24.65	24.65	24.65	24.59	27.62	27.48	23.49	25.35	25.93
Elapsed Time not Worked-%	22.13	29.00	26.00	26.00	26.00	26.00	26.00	25.00	21.00	26.00	22.00	18.00
Elapsed Time not Worked-Hours	6.15	7.30	6.41	6.41	6.41	6.41	6.39	6.90	5.77	6.11	5.58	4.67
Ship at berth, no labour allocated (hours)	10.02	7.42	8.20	8.20	8.20	8.20	6.00	5.00	4.00	4.00	3.00	2.00
Average Time Along Side-hours(SPC Data)	37.80	32.60	32.85	32.85	32.85	32.85	30.59	32.62	31.48	27.49	28.35	27.93
Terminal Capacity												
Slot density	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.3	2.4	2.2	2.4	2.6
Slots per hectare	100	100	100	100	100	100	110	120	140	110	130	150
Dwell time (days)	4.0	4.0	4.0	4.0	4.0	4.0	3.8	3.6	3.4	3.6	3.5	3.4
% of TEU shuttled to off-site storage	15%	15%	15%	15%	15%	15%	15%	17%	20%	18%	22%	25%
Berth Capacity * **												
TEU per Berth	112,357	172,316	195,308	195,308	195,308	195,308	222,162	251,744	305,779	247,149	319,564	405,452
Total notional capacity (TEU)	962,467	1,373,718	1,557,011	1,557,011	1,557,011	1,557,011	1,749,408	1,957,779	2,107,971	1,946,172	2,434,896	2,696,327
*Less contingency for market share/peaking ** *	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Berth capacity (planning purposes)	**818,000**	**1,168,000**	**1,323,000**	**1,323,000**	**1,323,000**	**1,323,000**	**1,487,000**	**1,664,000**	**1,792,000**	**1,654,000**	**2,070,000**	**2,292,000**
Terminal Area Capacity ** **												
TEU per ha	14,571	14,571	14,571	14,571	14,571	14,571	18,606	23,794	31,327	21,036	28,794	37,921
Total notional capacity (TEU)	1,126,348	1,126,348	1,126,348	1,232,717	1,232,717	1,232,717	1,574,104	2,012,960	2,650,298	1,779,639	2,435,964	3,208,077
*Less contingency for market share ** *	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Terminal area capacity (planning purposes)	**1,014,000**	**1,014,000**	**1,014,000**	**1,109,000**	**1,109,000**	**1,109,000**	**1,417,000**	**1,812,000**	**2,385,000**	**1,602,000**	**2,192,000**	**2,887,000**

* *P&O PBCT/Patricks weighted average-Source "Waterline" Sept. 2002* *Source: Maunsell Australia*

** *An imbalance in market share causes capacity to fall below theoretical port capacity. A contingency is also prudent for planning purposes.*

*** *Assuming 65% as a practical operating constraint on berth occupancy*

**** *Assuming 75% as a practical operating constraint on terminal occupancy to allow for peaking factors and selectivity*

***** *The effective number of berths takes account of increasing ship length over time.*

Table 5.7 Port Botany capacity with proposed development – 1,700m berth face and 62Ha of terminal area

PRODUCTIVITY SCENARIOS CONTAINER TERMINALS	HISTORICAL RESULTS			Scenario 1 No Productivity Improvement			Scenario 2 Modest Productivity			Scenario 3 High Productivity		
	1997-98	2000-01	2001-02	2004-05	2014-15	2024-25	2004-05	2014-15	2024-25	2004-05	2014-15	2024-25
CAPACITY PARAMETERS *												
Infrastructure												
Effective No. Berths*****	8.6	8.0	8.0	15.2	15.2	15.2	14.8	14.7	13.0	14.8	14.4	12.5
Terminal Area (ha)	77.3	77.3	77.3	146.6	146.6	146.6	146.6	146.6	146.6	146.6	146.6	146.6
Average Vessel Length (meters)	195	203	203	203	203	203	209	212	243	209	217	253
Berth Capacity												
Ave Cargo Exchange (TEU)	750	992	1,133	1,133	1,133	1,133	1,200	1,450	1,700	1,200	1,600	2,000
Ratio TEU: Containers	1.29	1.37	1.35	1.35	1.35	1.35	1.40	1.42	1.45	1.40	1.45	1.50
Average Cargo Exchange-Containers	581	724	841	841	841	841	857	1,021	1,172	857	1,103	1,333
Crane Rate(Containers/hr)*	17.8	24.8	27.4	27.4	27.4	27.4	28.0	29.0	30.0	29.0	31.0	33.0
Crane Intensity	1.51	1.63	1.68	1.68	1.68	1.68	1.68	1.70	1.80	1.70	1.80	1.90
Ship Rate*-Containers/Hr	26.88	40.50	46.10	46.10	46.10	46.10	47.11	49.30	54.00	49.30	55.80	62.70
Elapsed Labour Rate(containers/hr)*	20.93	28.76	34.11	34.11	34.11	34.11	34.86	36.98	42.66	36.48	43.52	51.41
Elapsed Labour Time-Hours	27.78	25.18	24.65	24.65	24.65	24.65	24.59	27.62	27.48	23.49	25.35	25.93
Elapsed Time not Worked-%	22.13	29.00	26.00	26.00	26.00	26.00	26.00	25.00	21.00	26.00	22.00	18.00
Elapsed Time not Worked-Hours	6.15	7.30	6.41	6.41	6.41	6.41	6.39	6.90	5.77	6.11	5.58	4.67
Ship at berth, no labour allocated (hours)	10.02	7.42	8.20	8.20	8.20	8.20	6.00	5.00	4.00	4.00	3.00	2.00
Average Time Along Side-hours(SPC Data)	37.80	32.60	32.85	32.85	32.85	32.85	30.59	32.62	31.48	27.49	28.35	27.93
Terminal Capacity												
Slot density	1.9	1.9	1.9	1.9	1.9	1.9	2.1	2.3	2.4	2.2	2.4	2.6
Slots per hectare	100	100	100	100	100	100	110	120	140	110	130	150
Dwell time (days)	4.0	4.0	4.0	4.0	4.0	4.0	3.8	3.6	3.4	3.6	3.5	3.4
% of TEU shuttled to off-site storage	15%	15%	15%	15%	15%	15%	15%	17%	20%	18%	22%	25%
Berth Capacity * **												
TEU per Berth	112,357	172,316	195,308	195,308	195,308	195,308	222,162	251,744	305,779	247,149	319,564	405,452
Total notional capacity (TEU)	962,467	1,373,718	1,557,011	2,972,364	2,972,364	2,972,364	3,296,176	3,688,781	3,971,766	3,666,911	4,587,747	5,080,327
*Less contingency for market share/peaking ** *	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
Berth capacity (planning purposes)	**819,000**	**1,168,000**	**1,324,000**	**2,527,000**	**2,527,000**	**2,527,000**	**2,802,000**	**3,136,000**	**3,377,000**	**3,117,000**	**3,900,000**	**4,319,000**
Terminal Area Capacity ** **												
TEU per ha	14,571	14,571	14,571	14,571	14,571	14,571	18,606	23,794	31,327	21,036	28,794	37,921
Total notional capacity (TEU)	1,126,348	1,126,348	1,126,348	2,136,127	2,136,127	2,136,127	2,727,703	3,488,179	4,592,596	3,083,866	4,221,185	5,559,151
*Less contingency for market share ** *	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Terminal area capacity (planning purposes)	**1,014,000**	**1,014,000**	**1,014,000**	**1,923,000**	**1,923,000**	**1,923,000**	**2,455,000**	**3,140,000**	**4,134,000**	**2,776,000**	**3,800,000**	**5,004,000**

* *P&O PBCT/Patricks weighted average-Source "Waterline" Sept. 2002* *Source: Maunsell Australia*

** *An imbalance in market share causes capacity to fall below theoretical port capacity. A contingency is also prudent for planning purposes.*

*** *Assuming 65% as a practical operating constraint on berth occupancy*

**** *Assuming 75% as a practical operating constraint on terminal occupancy to allow for peaking factors and selectivity*

***** *The effective number of berths takes account if increasing ship length over time. This table provides a snap shot of capacity, with the development, and includes the (theoretical) case of the total development being in place by 2004/05 for purposes of comparison with the existing infrastructure capacity*

5.6 Capacity versus demand

The following set of nine charts (Figure 5.3 to 5.11) brings together the demand analysis from Chapter 4 and the capacity analysis in Chapter 5. The charts are based on 3 scenarios of demand, 3 scenarios of productivity and 3 scenarios of trade through Newcastle/Pt Kembla.

5.6.1 Capacity with no productivity improvement, versus demand

Figure 5.3 Scenario A - capacity with no productivity improvements

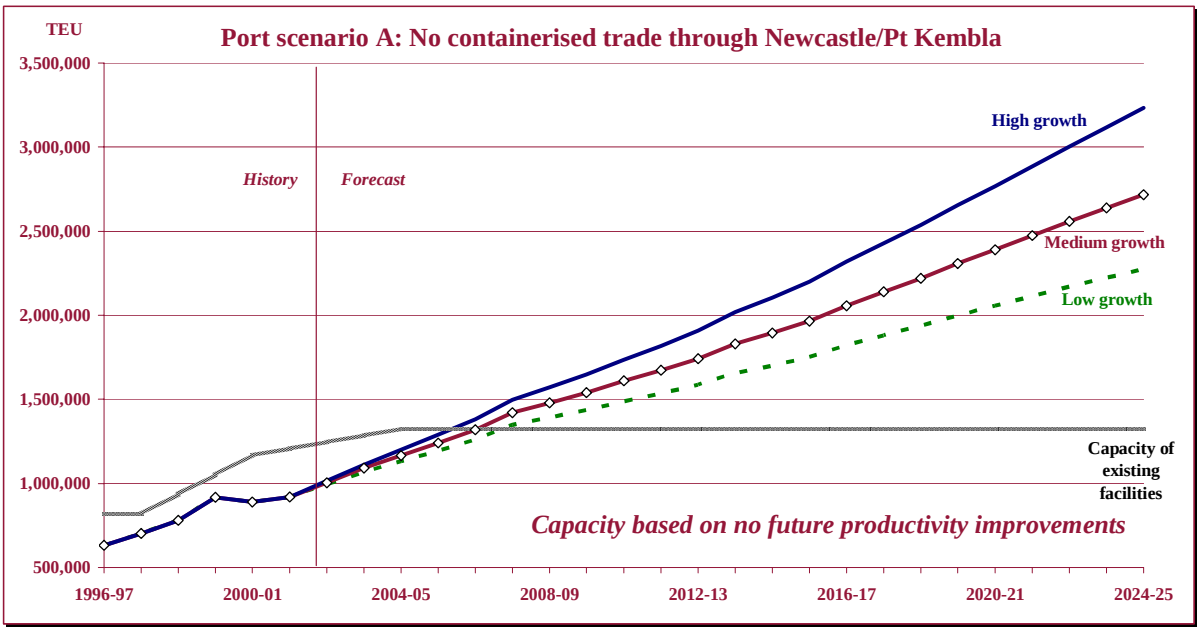


Figure 5.4 Scenario B - capacity with no productivity improvements

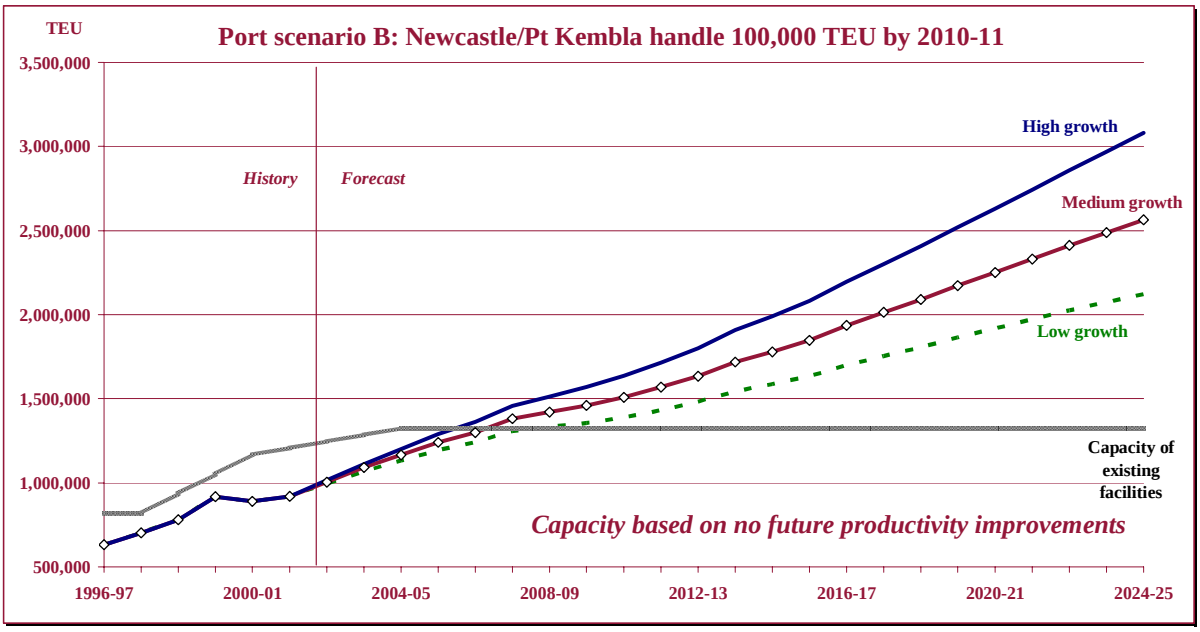
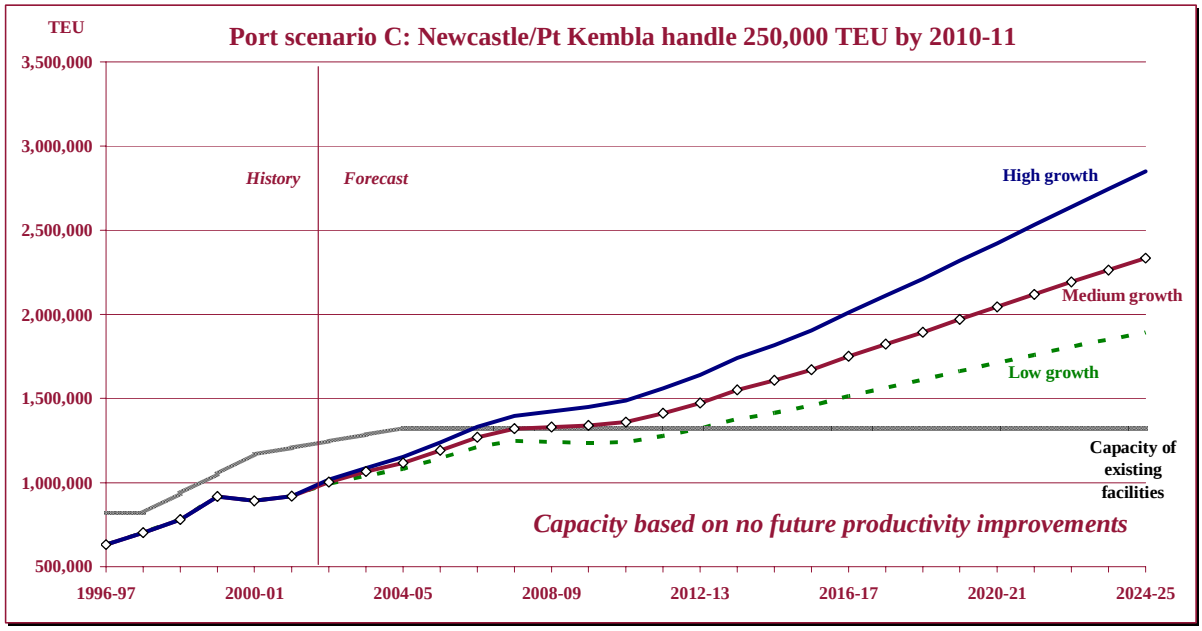


Figure 5.5 Scenario C - capacity with no productivity improvements



5.6.2 Capacity with modest productivity improvement, versus demand

Figure 5.6 Scenario A - capacity with modest productivity improvements

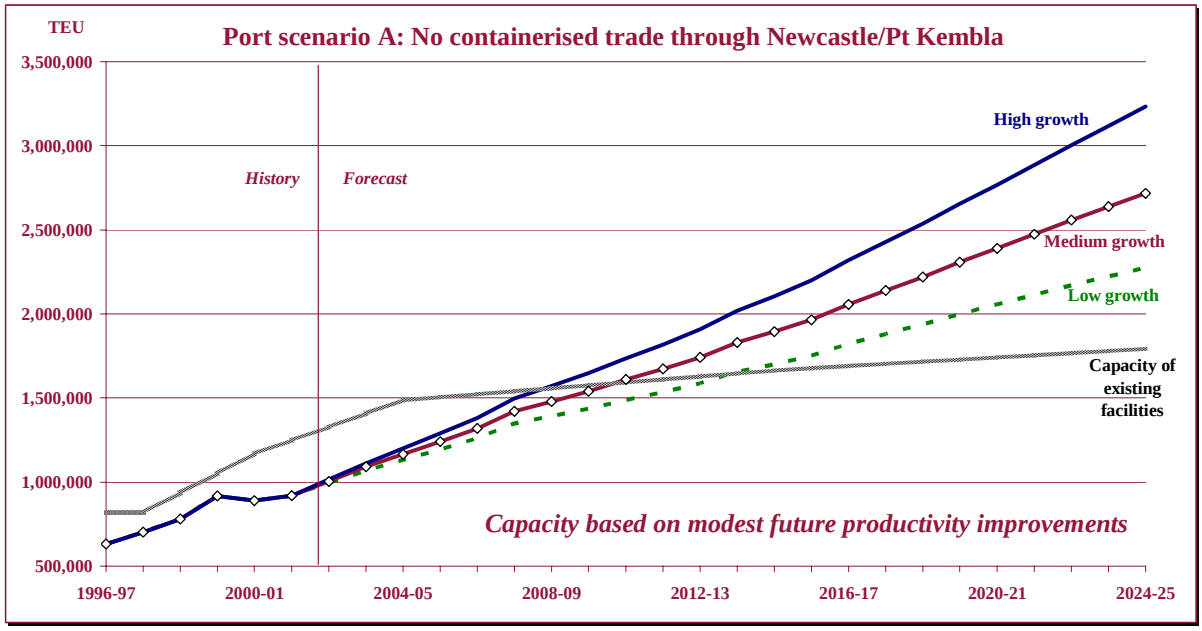


Figure 5.7 Scenario B - capacity with modest productivity improvements

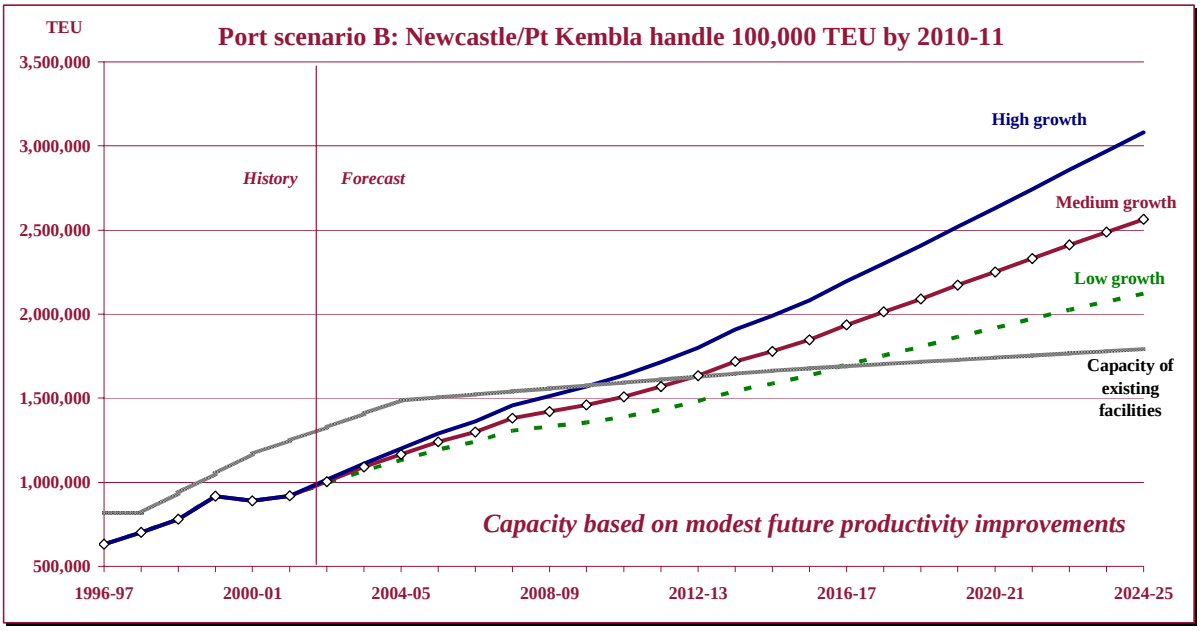
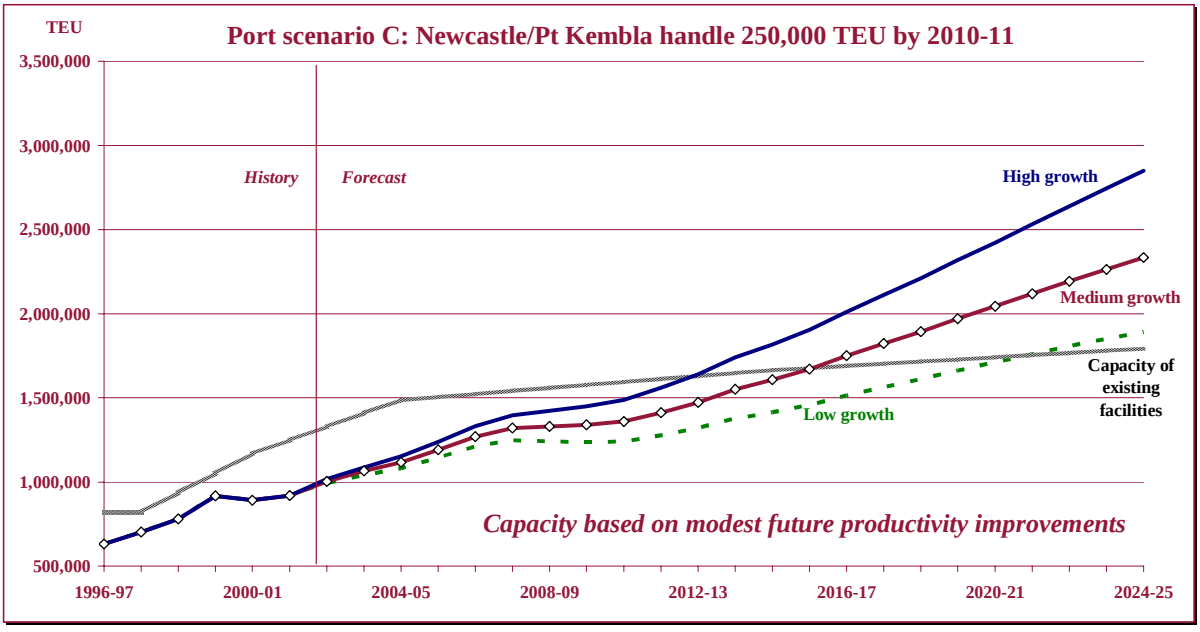


Figure 5.8 Scenario C - capacity with modest productivity improvements



5.6.3 Capacity with high productivity improvement, versus demand

Figure 5.9 Scenario A - capacity with high productivity improvements

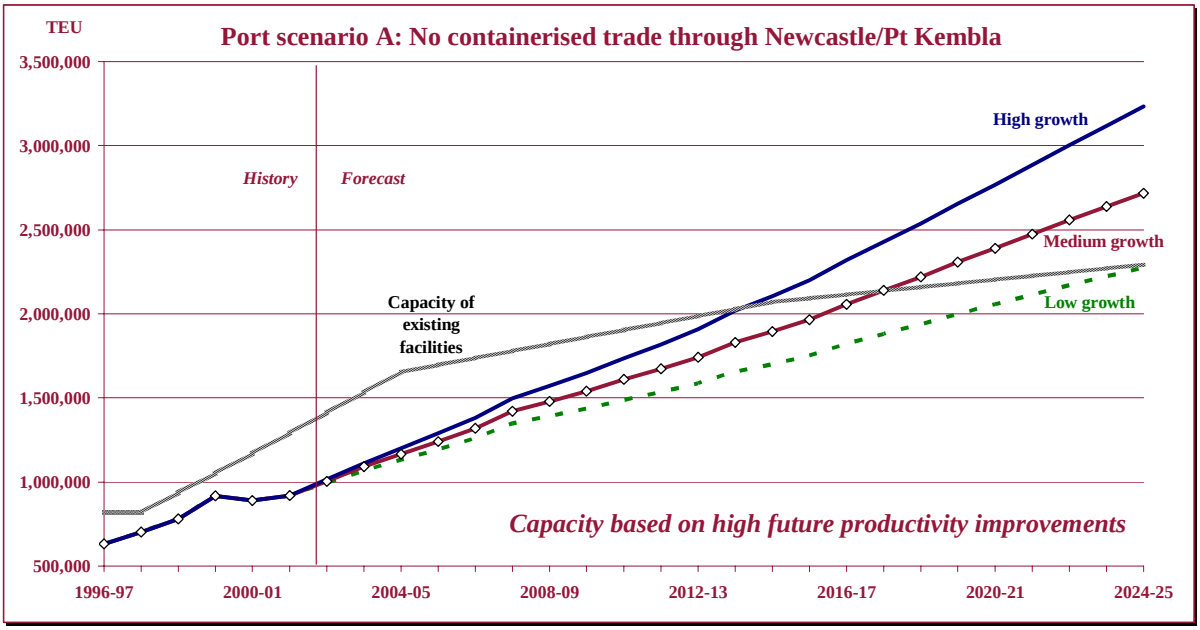


Figure 5.10 Scenario B - capacity with high productivity improvements

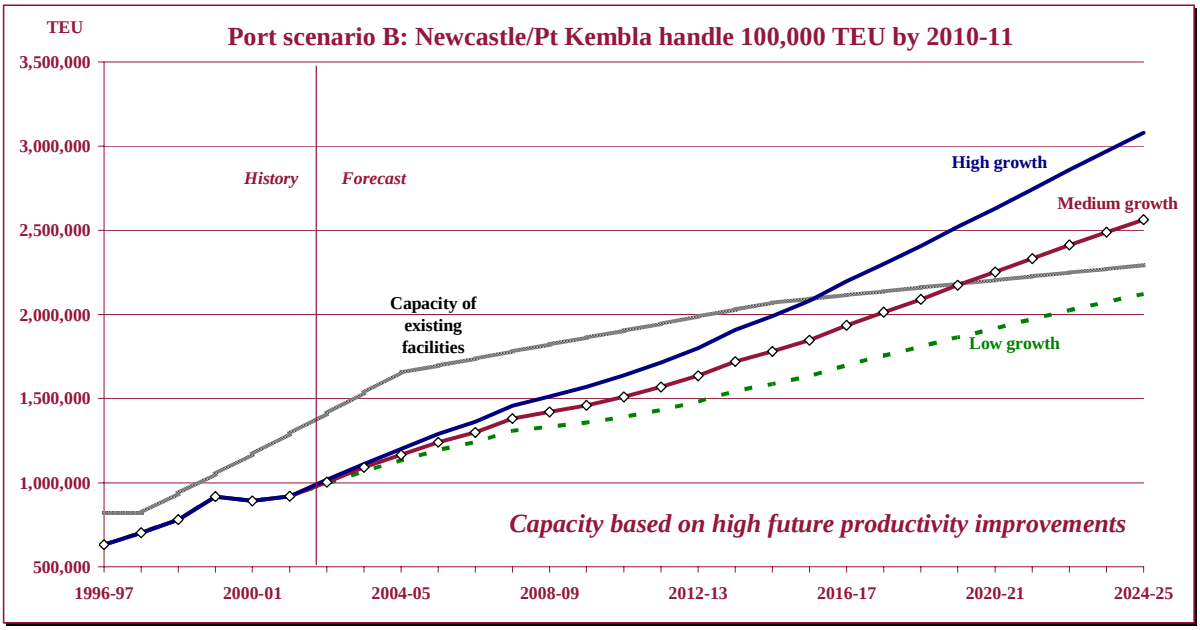
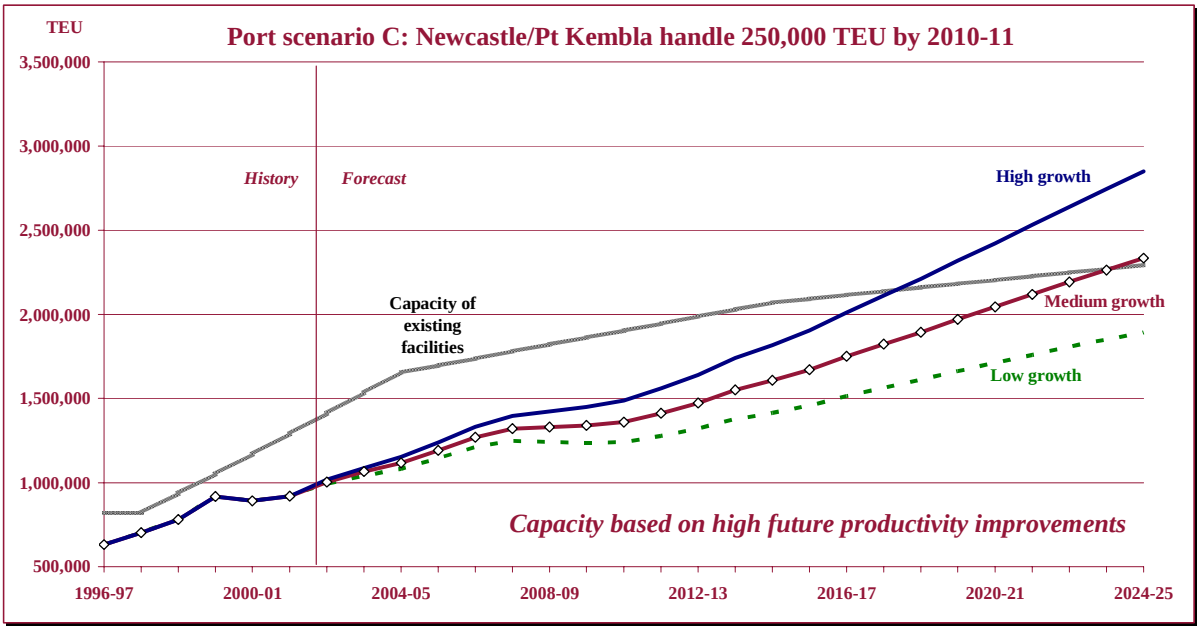


Figure 5.11 Scenario C - capacity with high productivity improvements



5.6.4 Timing of demand reaching capacity

The following set of three tables (Tables 5.8 to 5.10) summarise the year in which demand will reach capacity, as reflected by the intersections of the corresponding lines in the above charts.

Table 5.8: Scenario A – existing facilities reach capacity in the following year:

Demand growth / Productivity	High	Medium	Low
No increase	2006-07	2006-07	2007-08
Modest increase	2008-09	2010-11	2013-14
High increase	2013-14	2017-18	2024-25

Table 5.9: Scenario B – existing facilities reach capacity in the following year:

Demand growth / Productivity	High	Medium	Low
No increase	2006-07	2007-08	2008-09
Modest increase	2009-10	2012-13	2016-17
High increase	2015-16	2019-20	beyond 2024-25

Table 5.10: Scenario C – existing facilities reach capacity in the following year:

Demand growth / Productivity	High	Medium	Low
No increase	2006-07	2008-09	2012-13
Modest increase	2012-13	2015-16	2021-22
High increase	2018-19	2023-24	beyond 2024-25

5.7 Lead Times

Given the time involved for environmental and planning approvals, dredging and reclamation, fill consolidation periods and terminal construction, the lead time for provision of new capacity could well be in the order of 7 – 8 years. The timing of decision to proceed with the proposed development (particularly the dredging and reclamation) therefore needs to take into account these lead times. Actual terminal construction and commissioning of additional plant and container handling equipment (which have much lesser lead times) could be delayed if necessary following the dredging and reclamation, depending on the actual productivity and trade growth achieved in the interim. This needs to be monitored during the proving up process.

6. Competitive Analysis

Ports compete on the basis of the entire transport chain on offer. This includes road and rail links, capacity, congestion costs and the frequency and origin/destination of scheduled shipping services.

Approximately 80% of all containerised freight using Port Botany originates or terminates in the greater Sydney area. Sydney basin freight using alternative ports such as Newcastle would incur high land transport costs to link to final destinations or origins, compared with freight using Port Botany. The additional road transport costs from using Newcastle range from $40 per TEU (North-West Sydney), $150 per TEU to the industrial areas in Western Sydney and $280 per TEU (Botany). A lack of port capacity in Sydney, using Newcastle to serve substantial volumes of Sydney-based international freight, would also contribute to congestion on the F3 between Sydney and Newcastle.

Rail transport on the Newcastle – Sydney corridor and expensive because of limited freight capacity. Freight travelling Newcastle – Sydney uses capacity that could otherwise be sold as a Brisbane – Sydney train path, making Sydney – Newcastle freight a less attractive proposition to the rail infrastructure owner compared with Sydney – Brisbane freight.

The land transport cost associated with containerised trade through Sydney in 2001-02 to the geographical distribution of origins/destinations was compared with the cost that would have been incurred if the same trade was put through Newcastle (assuming it was actually possible). The land transport cost through Newcastle would have been $67 million higher than through Sydney, an average of $67 per TEU.

The Port of Newcastle has invited offers for financing, developing and operating a multi-purpose terminal at the former BHP steelworks site on the South Arm of the Hunter River, covering a total area of 45 hectares. The terminal will provide two container berths and facilities for other cargoes. Whilst building a new container terminal in Newcastle may well attract some trade over time, it is unlikely to work as an alternative port for the bulk of Sydney basin container trade. Port Kembla also has plans to attract container trade from Sydney. The analysis of demand and capacity above examined scenarios of the potential impact of these proposals on Port Botany (scenario B and C), however, there remains a question mark over whether these alternative ports can actually achieve these scenarios.

6.1 Introduction and Methodology

Currently Port Botany handles virtually all container traffic through NSW ports, with Port Jackson handling most of the remainder. However both Newcastle and Port Kembla have proposals to win a share of NSW container traffic. This section seeks to assess the competitive position of Port Botany compared with Newcastle and Port Kembla taking into account the origin and destination of container freight, landside transport costs to/from Port Botany compared with competing ports, and the various shipping, logistics and commercial considerations which affect the choice of port for shipping lines and shippers.

Rail carried 25% of the total landside movement of the 0.92 million TEU through Port Botany in 2001-02, the remainder was carried by truck. By 2010-11, 40% of trade through Port Botany is expected to be carried by rail. The approach adopted here is to assess existing and potential future costs of moving containers to/from Port Botany, compared with competing ports of Port Kembla, Newcastle and, to some extent, Melbourne and Brisbane. The key issues are whether landside transport access will constrain Port Botany container traffic and the impact of land transport on interport competition.

The methodology to assign land transport costs consists of five steps:

- Utilising data collected in a August 2000 study[5] for SPC on metropolitan container origins/destinations by road and SPC data on container movements in NSW;
- Determining the average travel distances and travel times to these regions from the three ports of Port Botany, Port Kembla and Newcastle, plus for comparative purposes Melbourne and Brisbane;
- Determining mode share;
- Assigning unit costs of the various modes; and,
- Determining overall transport costs.

6.2 Origin/Destination of Container Freight

The August 2000 SPC report on trucking movements to and from the port show a concentration of trucking movements to/from:

- The area around the port itself (Botany);
- An area centred around Strathfield, Marylands and Wetherill Park, particularly for imports;

[5] Metropolitan Sydney International Container Origin/Destination Analysis, August 2000

- Liverpool stretching to Campbelltown; and
- Blacktown.

Rail freight mode share and distribution data for 2001-02 and for 2010-11 was taken from the recently completed Maunsell report for the SPC, *Traffic and Landside Transport Study for the Proposed Port Botany Expansion*.

Table 6.1 below shows the combined road and rail distribution of freight for the Port Botany terminal for 2002.

Table 6.1 Distribution of Freight to/from Port Botany – 2001-02

SPC Road O/D 2001-02	Road O/D Breakdown 2001-02	Equvilant Rail O/D 2001-02	Rail O/D Breakdown 2001-02	Total O/D from area Road + Rail 2001-02	Total TEU 2001-02 Port Botany
Botany	22.1%	NA	0.0%	16.6%	152,315
City and E. Sub's.	0.2%	White Bay	2.3%	0.7%	6,806
South Sydney	2.6%	Cooks River	2.3%	2.5%	23,362
Southern Suburbs	1.1%	Cooks River	0.0%	0.9%	7,873
Inner West	10.9%	Cooks River/Enfeild	23.0%	13.9%	127,734
Liverpool	7.0%	Leightenford	1.9%	5.7%	52,612
South West	9.0%	Minto	2.0%	7.2%	66,335
Central West	16.1%	Yennora	5.4%	13.4%	122,904
Penrith	2.2%	Yennora	0.0%	1.7%	15,262
Industrial West	10.8%	Yennora	0.0%	8.1%	74,068
Blacktown	9.0%	Sandown	6.6%	8.4%	77,153
North Shore	3.6%	Cooks River	0.0%	2.7%	24,588
NW Sydney	1.4%	Cooks River	0.0%	1.0%	9,327
Hunter/Newcastle	1.0%		0.0%	0.8%	6,881
South Coast	1.0%		0.0%	0.8%	6,881
North West NSW	0.5%	North West NSW	17.3%	4.7%	43,132
Central West NSW	0.8%	Central West NSW	24.0%	6.6%	60,213
Riverina	0.8%	Riverina	6.7%	2.2%	20,580
Interstate	0.0%	Interstate	8.5%	2.1%	19,497
Total TEU	688,145		229,382		917,526

Source: Transport and Landside Transport Study for Proposed Port Botany Expansion, Maunsell Oct 2002

Key points from the above table include:

- Most of the truck movements (96%) are generated within the Sydney area itself.
- Over 30% of these truck movements occur within 10 km of the port, serving the Central Industrial Area to the north west of the port and local container parks.
- The largest area of economic activity relevant to the port is Central Western Sydney followed by the South West area and Blacktown-Baulkham Hills.

- Rail market share in 2001-02 was 25%, of which 57% was from rural NSW and interstate (mainly containers from Queensland)

Table 6.2 below shows the estimated combined road and rail distribution of freight for the Port Botany terminal for 2010-11.

Table 6.2 Distribution of Freight to/from Port Botany – 2010-11

SPC Road O/D 2010-11	Road O/D Breakdown 2010-11	Equvilant Rail O/D 2010-11	Rail O/D Breakdown 2010-11	Total O/D from area Road + Rail 2010-11	Total TEU 2010-11 Port Botany
Botany	20.1%	NA	0.0%	12.1%	182,031
City and E. Sub's.	0.1%	White Bay	2.3%	1.0%	14,835
South Sydney	2.0%	Cooks River	2.3%	2.1%	31,941
Southern Suburbs	0.8%	Cooks River	0.0%	0.5%	7,245
Inner West	9.0%	Cooks River/Enfeild	40.0%	21.4%	323,007
Liverpool	11.0%	Leightenford	1.9%	7.3%	110,893
South West	8.5%	Minto	2.0%	5.9%	89,303
Central West	15.0%	Yennora	7.0%	11.8%	178,107
Penrith	2.2%	Yennora	0.0%	1.3%	20,085
Industrial West	12.0%	Yennora	0.0%	7.2%	108,675
Blacktown	12.0%	Sandown	9.0%	10.8%	163,013
North Shore	2.5%	Cooks River	0.0%	1.5%	22,641
NW Sydney	0.8%	Cooks River	0.0%	0.5%	7,245
Hunter/Newcastle	1.0%		0.0%	0.6%	9,056
South Coast	1.0%		0.0%	0.6%	9,056
North West NSW	0.5%	North West NSW	11.0%	4.7%	70,760
Central West NSW	0.8%	Central West NSW	14.3%	6.2%	92,958
Riverina	0.8%	Riverina	6.7%	3.1%	47,376
Interstate	0.0%	Interstate	3.5%	1.4%	21,131
Total TEU	905,617		603,744		1,509,361

Source: Transport and Landside Transport Study for Proposed Port Botany Expansion, Maunsell Oct 2002

Key points from the above table include:

- Most truck movements will continue to be generated within the Sydney area itself.
- Activity is expected to move further west within Sydney, with growth in the Industrial West, Blacktown and closer in, in Liverpool.
- The largest area of economic activity relevant to the port continues to be the Central Western (but also further west) areas of Sydney, the South West area and Blacktown-Baulkham Hills areas.
- Rail mode share is expected to increase to 40% with the growth accounted for by mainly metropolitan shuttle traffic.

6.3 Land Transport Network

6.3.1 Existing Situation

6.3.1.1 Road

Figure 6.1 of the Sydney region shows the major road and rail links, plus intermodal terminals servicing Port Botany. Key strategic road corridors include:

- To the North - Southern Cross Drive/Eastern Distributor;
- To the West - Parramatta Road and the M4 Motorway; and
- To the South West – General Holmes Drive and the M5 Motorway.

The opening of the M5 East has delivered a significant improvement to the efficiency of road freight operations that service Port Botany, with travel times to/from the south western suburbs reduced by around 15 minutes. Nevertheless, key gaps remain within the road network including:

- The corridor between Port Botany and the M4 which is currently centred on Sydenham Road and passes through residential streets; and
- The corridor between Sydney Harbour and the areas of western and south western Sydney.

Figure 6.1 Road and rail links to Port Botany

6.3.1.2 Rail

The key strategic rail corridors include:

- The dedicated freight link between Port Botany and Enfield, Chullora via Marrickville and Dulwich Hill;
- The links out of the Sydney metropolitan area i.e:
  - to the North via Flemington Junction, Strathfield Junction and the Main North Line to service Queensland and northern NSW markets;
  - to the South via Cabramatta to service southern NSW and Victorian markets. (This is also the main Western route for trains to Adelaide and Perth); and
  - to the West via Flemington Junction, Clyde, St Marys and Penrith to service Central Western NSW markets.

There are also several strategic terminals, which are key to the successful operation of the rail system:

- The two terminals at Port Botany within the operations of the two port terminal operators (P&O and Patrick) which provide for direct import and export operations;
- A third site at Port Botany under the control of a container park operator, P&O Trans Australia;
- The terminal at White Bay which again serves import and export operations;
- The terminal at Enfield which currently serves as a marshalling yard for rail wagons and trains without any facilities for transfer to road;
- The terminal at Chullora, under the control of Pacific National, which is the main Sydney terminal for interstate freight;
- The terminal at Clyde which is under the control of Pacific National; and
- Other smaller terminals in the Sydney region owned and operated by private operators including:
  - Cooks River (operated by Maritime Containers Service);
  - Camellia operated by Patrick;
  - Yennora operated by Patrick;
  - Leightonfield (operated by BHP and Lachlan Valley Transport); and
  - Minto (operated by Bowport Allroads).
  - Development of a new terminal at St Mary's is being considered by Pacific National

Overall, freight movements on the metropolitan rail network are constrained by the passenger commuter movements which take priority. There are curfews on freight train movements in the morning and afternoon peaks on the metropolitan networks. In peak periods at critical junctions in the system there are no slots in the timetable available for freight trains. The major impediments and gaps in the rail network are at:

- Flemington Junction for trains moving westbound to Clyde and beyond to St Marys;
- Cabramatta Junction for trains moving in-bound towards Chullora; and
- On the North Coast Line at Epping and at Cowan where freight trains constrain overall system capacity due to the steep grades to be negotiated in these areas.

6.3.2 Future Transport Network Improvements

6.3.2.1 Road Network

The government is currently finalising arrangements with the preferred tenderers for the construction of the Western Sydney Orbital (WSO), which is a 40km motorway providing a (tolled) link between the M5/Hume Highway at Prestons with the M2 at West Baulkham Hills. The WSO will improve freight access to major economic and employment zones, and provide faster and more efficient road transport in Western Sydney generally.

As **Table 6.5** shows, this will reduce times from the outer western regions of Sydney to both Port Kembla and Newcastle. For example, travel time from the Industrial West – Wetherill Park – to Newcastle reduces from 150 minutes in 2002, to 128 minutes in 2010. From the same location, transit time to Port Kembla over the eight years reduces from 94 minutes to 93 minutes.

Required projects to address remaining gaps and provide sufficient growth for the future are described as follows.

The completion of the Eastern Distributor and the M5 East have improved traffic flows around the Sydney region and improved accessibility for the ports. However, a key deficiency is the amount of heavy vehicles within the inner Western suburbs of Sydney particularly Marrickville and Leichhardt. In addition, the Sydney Travel Model predicts that the M5 East will be close to saturation within the first ten years following opening. Therefore, although the M5 East will assist with the facilitation of freight growth, additional corridors to more directly link the central western areas in Sydney with the ports would be desirable. The key remaining gaps are:

- A direct connection between the M4/Parramatta Road and Qantas Drive through a tunnel;

- The proposed M4 East extension and improvement to the City West link to facilitate road based freight traffic moving in and out of the port facilities at White Bay and Glebe Island; and
- An upgraded connection between Foreshore Drive and Southern Cross Drive.

6.3.2.2 Rail Link to Botany

Sydney Ports Corporation's Strategic Plan sets out a goal to improve the rail mode share from 25% currently to 30% in 2006 and 40% from 2010-11. This suggests that rail will be handling around 600,000 TEU pa in 2010-11, and over 900,000 TEU pa in 2020-21. A recent study by Maunsell[6] estimated that the capacity of the dedicated freight line in its current configuration is approximately 90 train paths per day, and that demand would exceed this figure by 2015-16. The planned duplication of the Botany-Cooks Rail Link would increase capacity to accommodate growth beyond 2015-16.

Terminal capacity at Port Botany is unlikely to be a limiting factor for rail transport in the medium term, however the P&O terminal, if unchanged, will reach capacity before the Patrick terminal (around 2020), due to its shorter siding length

A potential future constraint exists at the junction to Cooks River terminal where, due to recent yard rationalisation, shunting movements necessitate the use of the main line. This reduces the benefits of the duplication works as it allows only one line to operate, hence affecting capacity of the dedicated freight line.

The achievement of the mode share target would require the upgrading or construction of new metropolitan intermodal facilities, in order to meet the forecast demand. It will be important that the new intermodal container depot(s) (ICD) be built at a location(s) that have both sufficient cargo demand and sufficient access to the rail network to reach the port.

The forecast capacity problems at Camellia and Yennora could be addressed by increasing siding length, increasing terminal capacity and improving the efficiency of container handling operations. Upgrading of the intermodal terminals would be a commercial decision to be taken by the terminal operators.

Capacity on the metropolitan shared network, particularly the Main Western line may need to be improved by:

- Increasing intermodal terminal capacity and/or developing new intermodal terminals in the metropolitan area;

[6] Traffic and Landside Transport Study for Proposed Port Botany Expansion, October 2002

- Increasing train lengths from the intermodal terminals outside the dedicated freight network;
- Reducing headways (through signalling changes and improved operational management); and
- Providing more dedicated lines for freight.

Passing loops in the rural area may need to be upgraded to allow for 900m trains.

If detailed train operational planning cannot mitigate the effect of shunting on the main line at Cooks River through timetabling, then a new shunting neck would need to be constructed by 2021.

6.3.2.3 Rail Freight Improvements – Newcastle and Port Kembla

There are several rail improvements planned for the next ten years that would benefit rail freight transport between Sydney and Newcastle and between Sydney and Port Kembla.

Most of these improvements to rail infrastructure are part of the NSW Government's integrated transport plan, *Action for Transport 2010*, and include:

- A priority freight line through Sydney from Macarthur in the south to Cowan in the north via Chullora/Enfield
- A high speed passenger rail link between Hornsby and Newcastle, which would allow the existing track to be used as a priority freight line that connects with the proposed Sydney priority freight line.
- Eight new passing loops on the Main Southern Line, as part of a Statewide program of constructing 25 new passing loops.
- A new rail spur to the inner harbour at Port Kembla
- A new dedicated rail siding at the Port of Newcastle
- A proposed grade separated junction for coal freight at Kooragang Island north of Newcastle
- New intermodal container depot(s) in Sydney located on the dedicated freight network.

However, not withstanding these planning proposals, we understand that no major investments in the Newcastle – Sydney corridor which would benefit freight traffic have been committed or are expected prior to 2010.

6.4 Transport Costs and Assumptions

6.4.1 Approach and Assumptions

For both road and rail, unit costs have been determined in this study in terms of a kilometre and a time component for the years 2002 and 2010. The travel time and travel distance between each inland zone and alternative port were developed using time and distance 'skims' from Maunsell's Sydney Travel Model. This model also estimates these parameters for future years – in this case 2010 - thus including the effects of the Western City Orbital and enabling the costs of increasing congestion on the road network to be modelled and costed. The "skims" covered peak hour morning travel to and from the port. In our calculation of travel costs, we have taken the average of the time and distance journeys in and out of the port. Due to the complexity in analysing rail capacity, as it is inherently a managed system, a constant cost into the future was applied (all costs are measured in 2001/02 dollars).

The transport unit costs for road, for 2001-02 take into account the effects of the M5 East and Eastern Distributor. Those for 2010-11 take into account the expected impact of developments such as the Western Sydney Orbital and the Cross City Tunnel, and the forward plan of transport works in the NSW Government's *Action for Transport 2010*. The road trip unit costs are one way rates with an allowance for backloading. We have costed truck operations on the basis of "transit time" (excluding pick-up and delivery) and allowed in the "cost" an allowance for 2.5 hours truck time per trip for waiting, loading and unloading in the terminal at each end and for time taken in repositioning for back load cargo.

In the case of rail, the unit costs are developed from Maunsell cost models and assumptions of train lengths, operating costs and utilisation. Rail costs are also based on 50% back loading, with full containers and the other slots being filled with empty containers. Rates are terminal to terminal with lifting charges and track access charges. These rates are therefore not to be compared with door to door road costs. They are provided to demonstrate the difference in rail costs between each origin/destination and the various ports. The road pick-up and delivery cost is assumed to be the same irrespective of whether the container moves through Newcastle, Port Botany or Port Kembla.

As port throughput increases over time, and even allowing for an increase in rail mode share, the number of trucks that have to be loaded and unloaded at the terminals will impact on congestion on the roads around the container terminals. As the number of truck calls to the terminal gate increases, improved booking systems, increased backloading and larger trucks would ameliorate the congestion. Developments of intermodal terminals in the Sydney Basin, including the proposed Enfield terminal, will facilitate an increase in rail mode share and reduce the number of trucks on the roads around Botany and time spent by trucks queuing at terminals. There is further potential upside if truck activity can be spread more evenly

throughout the day. This could include longer warehouse opening hours and night-time freight movement.

Tables 6.3 to 6.6 summarise the analysis. Table 6.3 and Table 6.4 model time, distance and cost for road and rail in 2001-02, whilst tables 6.5 and table 6.6 model the same parameters for 2010-11.

6.4.2 Port Botany Transport Cost Issues

6.4.2.1 Sydney

From our modelling, (see Table 6.3) it is estimated that the cost per TEU of a round trip from Wetherill Park (Industrial West) to Port Botany is approximately $250. The rate per container is likely to be similar for an importer or exporter. The reason for this is that importers and exporters are involved in different activities and businesses and are not likely to coordinate their transport activities. The industry therefore normally quotes on the basis of a backload not being present. Although if the probability of getting a backload increases over time, it will tend to suppress the price charged for the one-way fare.

For the Sydney metropolitan area, according to our analysis, Port Botany enjoys a cost advantage over both Newcastle and Port Kembla, which does not dissipate over time (see Table 6.5). However in the regional areas of NSW, the other NSW ports, as well as Brisbane and Melbourne enjoy slight cost advantages. For example from Narrabri, by road, Newcastle is $780 in 2002 and Port Botany $960. Brisbane is $860 for a truck journey, thus lower than Port Botany's cost, but more than Newcastle's. By rail – which is the predominant mode from this region – Newcastle is also less expensive at $320 compared with Port Botany's cost of $420 (see Table 6.4).

As discussed in Section 6.5 following, factors other than transport unit costs would also come into play, such as container availability, ship calling patterns etc, which allows Sydney to compete successfully, even with a modest land transport disadvantage for some of the northern NSW and southern NSW regional trades (as is the case with Narrabri).

6.4.2.2 Newcastle

Newcastle is approximately 170 km by road from Sydney via the F3, and 171 km by rail, measured to the Yennora Terminal.

A main argument being pursued by those in favour of Newcastle as an alternative port to Port Botany is that the F3 provides a high quality route to Sydney and that delays in getting in and out of the port will not be an issue. Freight rates examined between Newcastle and Sydney range between $320 and $450 per TEU for road (refer to Table 6.3) from the main industrial centres in Sydney and $250 to $270 per TEU by rail (refer to Table 6.4). Whilst road

operating costs are high, back loading tends to be more significant due to the longer distances from Newcastle relative to distances around Sydney. Industry sources advise us that truck operators have to find backloading opportunities to ensure profitability on the route and that backloading rates are higher than for a Port Botany trip. We have used a higher "TEU per road trip" rate of 1.8 for Newcastle – Sydney traffic compared with 1.35 for Botany - Sydney and Kembla – Sydney traffic.

6.4.2.3 Port Kembla

Port Kembla is approximately 90 km by road south of Sydney on the Southern Freeway and 103 km by rail from the Yennora terminal.

Transport rates from the main industrial areas of Sydney are around $280 - $340 per TEU by road (refer to Table 6.3) and $200 to $210 per TEU by rail.

6.4.2.4 Land Bridging to/from Interstate Ports

The use of Brisbane and Melbourne as an alternative port call for Sydney freight necessitates a significant land bridge. Brisbane and Melbourne could be alternative ports to Port Botany if congestion costs and port call costs at Port Botany were such that they outweighed the additional land bridge costs of servicing Sydney freight from Brisbane or Melbourne. Furthermore, shipping lines would only bypass Sydney if doing so achieved their objectives in terms of optimising port call patterns and maintaining market share.

With regard to land bridging, we have calculated the costs (based on a 60 wagon train, hauling 120 TEU north and 60 full TEU south) for a land bridge between Sydney and Brisbane to be $650 per TEU by rail (see Table 6.4 below).

These additional land bridging costs are significant. On a macro level the net additional costs of around $400 for container delivery would be unsustainable for any industry in the longer term. These substantial land bridging costs will ensure continued demand for shipping lines to continue making direct calls to Sydney. If congestion costs per unit reached this level, the more likely scenario is that industries would be forced to relocate to more favourable locations rather than withstanding high land bridging costs to remain in Sydney.

Table 6.3 Indicative Freight Rates per TEU for Road Services – 2001-02

	Estimated Average cost per TEU - 2001-02														
	Botany			Port Kembla			Newcastle			Brisbane			Melbourne		
	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)
Botany	$ 160	1	2	$ 320	84	84	$ 440	172	154	$ 1,530	1,006	731	$ 1,310	867	608
City and Eastern Suburbs	$ 200	11	20	$ 350	90	96	$ 400	165	149	$ 1,530	1,028	726	$ 1,330	869	620
South Sydney	$ 200	15	22	$ 280	69	62	$ 420	176	166	$ 1,560	1,039	744	$ 1,260	855	587
Southern Suburbs	$ 200	15	22	$ 280	69	62	$ 420	176	166	$ 1,560	1,039	744	$ 1,260	855	587
Inner West	$ 220	21	32	$ 320	81	86	$ 380	164	146	$ 1,520	1,027	723	$ 1,260	852	586
Liverpool	$ 230	34	40	$ 310	78	76	$ 410	172	154	$ 1,530	1,035	731	$ 1,220	836	566
South West	$ 250	53	47	$ 340	97	87	$ 450	195	177	$ 1,590	1,058	754	$ 1,190	815	549
Central West	$ 250	34	45	$ 340	87	90	$ 380	163	145	$ 1,520	1,026	722	$ 1,260	845	582
Penrith	$ 280	63	62	$ 400	114	121	$ 420	185	162	$ 1,560	1,048	739	$ 1,280	858	595
Industrial West	$ 250	43	46	$ 350	89	94	$ 400	170	150	$ 1,530	1,033	727	$ 1,250	844	580
Blacktown	$ 250	46	44	$ 400	101	117	$ 360	161	130	$ 1,490	1,024	707	$ 1,310	858	607
North Shore	$ 250	30	42	$ 400	105	117	$ 370	156	136	$ 1,510	1,019	713	$ 1,360	880	636
NW Sydney	$ 280	37	59	$ 410	107	127	$ 320	137	103	$ 1,450	1,000	681	$ 1,330	871	625
Newcastle PO	$ 440	172	154	$ 620	256	231	$ 160	10	15	$ 1,190	872	551	$ 1,510	1,012	714
Wollongong PO	$ 320	84	84	$ 190	10	15	$ 620	256	231	$ 1,510	1,128	712	$ 1,250	819	579
Narrabri	$ 960	622	425	$ 1,110	710	501	$ 780	464	328	$ 860	592	374	$ 1,620	1,093	772
Parkes	$ 690	374	288	$ 720	472	299	$ 810	490	346	$ 1,330	988	624	$ 1,090	697	492
Griffith	$ 950	595	420	$ 710	466	295	$ 1,080	694	490	$ 1,630	1,230	777	$ 690	402	284

Note: Transit time only addresses the time the truck is on the road. However the costs include pick up and delivery costs

Source: Maunsell data and analysis

Note: "Transit time" addresses the time the truck is on the road. " Cost" includes terminal time and any transit time involved in seeking back load cargo. For 2002 we have assumed 1.35 TEU per road trip for Port Botany and Port Kembla, 1.8 TEU per road trip for Newcastle – reflecting industry advice that back load rates for Newcastle are higher and 1.5 for the regional areas of NSW and Melbourne and Brisbane.

Table 6.4 Indicative Freight Rates per TEU for Rail Services – 2001-02

	Estimated Average Round Trip cost per TEU - 2001-02								
	Botany			Port Kembla			Newcastle		
	Cost	km (one way)	Transit time (min, one way)	Cost	km (one way)	Transit time (min, one way)	Cost	km (one way)	Transit time (min, one way)
Yenora	$ 150	37	30	$ 200	107	105	$ 250	171	165
Minto	$ 160	50	45	$ 210	120	120	$ 270	193	195
Sandown	$ 150	33	30	$ 200	103	105	$ 250	167	165
Enfield	$ 150	20	30	$ 200	103	105	$ 250	167	165
Griffith	$ 470	640	645	$ 420	557	555	$ 540	808	810
Parkes	$ 350	446	450	$ 410	534	540	$ 450	614	615
Narrabri	$ 420	565	570	$ 460	653	660	$ 320	397	390
Melbourne	$ 610	962	825	$ 560	879	750	$ 680	1,130	975
Brisbane	$ 650	986	1,185	$ 710	1,074	1,290	$ 570	818	975

Source: Maunsell data and analysis

Note: Rail costs are rail terminal to rail terminal including terminal change

Table 6.5 Indicative Freight Rates per TEU for Road Services – 2010-11 (in 2001-02 dollars)

	Estimated Average cost per TEU - 2010-11														
	Botany			Port Kembla			Newcastle			Brisbane			Melbourne		
	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)	Charge	km (one way)	Transit time (min, one way)
Botany	$ 150	1	2	$ 310	84	86	$ 420	172	145	$ 1,520	1,035	722	$ 1,290	864	602
City and Eastern Suburbs	$ 190	11	23	$ 330	90	100	$ 360	165	137	$ 1,510	1,028	714	$ 1,320	867	617
South Sydney	$ 190	15	23	$ 260	69	63	$ 400	176	158	$ 1,550	1,039	735	$ 1,280	854	595
Southern Suburbs	$ 190	14	23	$ 260	69	63	$ 400	176	158	$ 1,550	1,039	735	$ 1,280	854	595
Inner West	$ 220	20	34	$ 320	80	87	$ 370	164	139	$ 1,510	1,027	716	$ 1,280	851	593
Liverpool	$ 230	33	44	$ 310	78	81	$ 370	170	141	$ 1,520	1,033	718	$ 1,230	834	567
South West	$ 260	50	58	$ 330	96	95	$ 390	192	147	$ 1,530	1,055	724	$ 1,210	815	552
Central West	$ 250	32	49	$ 330	87	96	$ 360	162	137	$ 1,510	1,025	714	$ 1,260	844	585
Penrith	$ 290	63	76	$ 360	114	113	$ 370	184	143	$ 1,520	1,047	720	$ 1,280	858	591
Industrial West	$ 250	41	53	$ 320	89	93	$ 350	169	128	$ 1,490	1,032	705	$ 1,230	843	570
Blacktown	$ 260	45	58	$ 350	101	103	$ 320	160	115	$ 1,460	1,023	692	$ 1,250	857	580
North Shore	$ 230	30	48	$ 390	105	129	$ 360	156	135	$ 1,510	1,019	712	$ 1,350	879	627
NW Sydney	$ 250	37	53	$ 380	106	122	$ 310	140	102	$ 1,450	1,003	679	$ 1,310	870	609
Newcastle PO	$ 420	172	145	$ 590	256	231	$ 160	10	15	$ 1,190	872	551	$ 1,510	1,012	714
Wollongong PO	$ 310	84	84	$ 180	10	15	$ 590	256	231	$ 1,510	1,128	712	$ 1,250	819	579
Narrabri	$ 930	622	425	$ 1,070	710	501	$ 750	464	328	$ 860	592	374	$ 1,620	1,093	772
Parkes	$ 670	374	288	$ 700	472	299	$ 780	490	346	$ 1,330	988	624	$ 1,090	697	492
Griffith	$ 920	595	420	$ 680	466	295	$ 1,040	694	490	$ 1,630	1,230	777	$ 690	402	284

Source: Maunsell data and analysis and the "Transport and Landside Transport Study for Proposed Port Botany Expansion Report" - Maunsell October 2002

Note: "Transit time" addresses the time the truck is on the road. " Cost" includes terminal time and any transit time involved in seeking back load cargo. For 2002 we have assumed 1.5 TEU per road trip for Port Botany and Port Kembla, 1.9 TEU per road trip for Newcastle – reflecting industry advice that back load rates for Newcastle are higher and 1.6 for regional areas of NSW and Melbourne and Brisbane.

Table 6.6 Indicative Freight Rates per TEU for Rail Services – 2010-11 (in 2001-02 dollars)

	Estimated Average Round Trip cost per TEU - 2010-11								
	Botany			Port Kembla			Newcastle		
	Cost	km (one way)	Transit time (min, one way)	Cost	km (one way)	Transit time (min, one way)	Cost	km (one way)	Transit time (min, one way)
Yenora	$ 150	37	30	$ 210	107	105	$ 260	171	165
Minto	$ 150	50	45	$ 220	120	120	$ 280	193	195
Sandown	$ 150	33	30	$ 200	103	105	$ 250	167	165
Enfield	$ 150	20	30	$ 210	107	105	$ 260	171	165
Griffith	$ 470	640	645	$ 420	557	555	$ 540	808	810
Parkes	$ 350	446	450	$ 410	534	540	$ 450	614	615
Narrabri	$ 420	565	570	$ 460	653	660	$ 320	397	390
Melbourne	$ 640	962	765	$ 570	879	705	$ 690	1,130	900
Brisbane	$ 630	986	915	$ 690	1,074	990	$ 560	818	750

Source: Maunsell data and analysis and the "Transport and Landside Transport Study for Proposed Port Botany Expansion Report" - Maunsell October 2002

Note: Rail costs are rail terminal to rail terminal including terminal change

6.5 Competition between ports

6.5.1 Background

The analysis in Chapters 4 and 5 included several scenarios of substantial volumes of NSW container traffic through the Port of Newcastle and Port Kembla. The remainder of this section considers the likelihood of these alternative ports to Port Botany playing a substantial role for handling NSW container traffic.

6.5.2 Land Transport Differentials

To demonstrate the land transport differential between Sydney and Newcastle, the land transport requirements of NSW containerised commodity trade currently handled through Sydney was compared with the cost that would be incurred for the same trade through Newcastle. (Assuming the F3 and the road and rail network around Newcastle had sufficient capacity to serve NSW without significant congestion delays arising.)

This calculation compares the land transport cost of moving Sydney's 1,009,342 containers in 2001-02 to the geographical origins and destinations of the cargo, allowing for the road/rail mode share and different cost structures of road and rail transport.

The model calculates geographic distributions and road rail shares for 42 export commodities and 42 imports commodities, 84 in all. The list of commodities where the land transport cost to Newcastle would be cheaper than to Port Botany is in Table 6.7. There are a few commodities where Newcastle has a transport cost advantage compared with Port Botany (mainly some agricultural exports from northern NSW).

If Newcastle were able to attract all of the trades where they have the land transport cost advantage, the 33,300 TEU per annum would amount to around 3% of Sydney's containerised trade. This is well within the range of scenarios in Chapter 4 for throughput at secondary NSW container ports.

Sydney is predominantly an import port, with 61% imports and 39% exports. Much of the imports are consumer goods and inputs to manufacturing, which go straight to retail Distribution Centres (DC) and industrial regions in the Sydney basin. Newcastle and Port Kembla are not a competitive port of entry for the large volumes of imports into the Sydney basin. Large retailers like Coles Myer and Woolworths only operate one major DC to service all of NSW – these DCs are located close to the major market of the Sydney basin. The location of the DC is unlikely to change in the near future. Although some imports ultimately end up in stores in Newcastle and northern NSW, they must first be processed through the Sydney DC.

Table 6.7 Trades where land transport costs to Newcastle are cheaper

Exports	*TEU*
Containerised Ores, Slag, Ash & Coal	1,600
Wool	10,400
Cotton	21,300
TOTAL	33,300

Note: figures include an allowance for the typical proportion of empty returns

While land transport costs to Newcastle are cheaper for some commodity export trades, for many containerised commodities Newcastle is significantly more expensive. Table 6.8 compares the total land transport costs for all commodities. A single container vessel carries many different commodities, so shipping lines and the majority of exporters and importers will prefer the port that can offer the lowest average costs over a large number of commodities.

Table 6.8 compares the total land transport component of NSW containerised trade with the costs imposed if the same trade were to be transported through Newcastle, from/to the same set of origins/destinations. These calculations take into account the geographical distribution, road/rail modal shares and backloading for 42 import and 42 export containerised commodities.

As noted earlier, Port Botany is relatively less competitive for export freight (which mostly originates in rural NSW), but still has a land-based cost advantage of approximately $51 per export TEU compared with Newcastle. Port Botany has a strong natural advantage for NSW imported commodities, which are mostly destined for the Sydney basin, with a cost advantage of approximately $77 per TEU.

Shipping lines prefer a port where they can drop off imports and also pick up exports. This allows the shipping line to have a fuller load in and out of the port. If some vessels were to call at Newcastle to pick up exports and other vessels were to stop at Sydney to drop off imports, it would reduce the two-way loading of vessels considerably. As a result, the third part of Table 6.8 is also relevant. Port Botany's average cost advantage of $67 per TEU (averaged over the mix of imports and exports) make Sydney the natural choice for a shipping line that wishes to balance their loads in both directions by dropping off imports and picking up exports in Sydney.

Table 6.8 Total land transport costs ($2001-02)

Exports	***Land transport costs***
Sydney	$129 million
Newcastle	$148 million
Sydney's cost advantage	$19 million
	$51 per TEU
Imports	
Sydney	$184 million
Newcastle	$232 million
Sydney's cost advantage	$48 million
	$77 per TEU
Total	
Sydney	$313 million
Newcastle	$380 million
Sydney's cost advantage	$67 million
	$67 per TEU

Source: Access Economics and Maunsell calculations

It would cost $67 million per annum in extra land transport costs to ship Sydney's 2001-02 containerised trade through Newcastle. Newcastle would only be able to handle significant volumes of NSW freight if congestion costs and queuing in Sydney were large enough to offset the $67 million per annum land transport cost disadvantage of Newcastle.

As the faster growing trades are consumer items and manufactures, (which favours Sydney), rather than the slow growing exports of rural commodities for which Newcastle is better positioned, by 2010-11, trade through Sydney will be one third exports and two thirds imports. The already large geographical advantage of Port Botany will continue to increase in the future as the composition of cargo changes over time.

The costs involved in a vessel making a call at a port (pilotage, linesman and the cost of time involved), make it very unlikely that a vessel will stop at both Port Botany and Newcastle – they will choose one or the other. Shipping lines will select the port that offers the best overall advantage in terms of transport costs and trade volumes.

6.5.3 Port Kembla

A similar exercise was conducted for Port Kembla. Port Kembla has lower land transport costs for freight originating or destined for south west NSW. However, some of the containerised exports from south west NSW are exported from the Port of Melbourne, so even if Port Kembla were able to attract these trades, it would have a reduced impact on Sydney.

Port Kembla is in a similar cost disadvantage situation as Newcastle for handling NSW exports. It would cost approximately $53 per TEU more to send NSW exports through Port Kembla, rather than Port Botany (compared with Newcastle at $51 more per TEU). Port Kembla is closer to the Sydney basin and is slightly more competitive than Newcastle for handling NSW imported cargo (although still significantly more expensive than Port Botany) at $67 per TEU more than Port Botany, compared with $77 per TEU more for Newcastle.

6.6 Other Competition Issues

6.6.1 Hubs

Exporters and importers have a strong preference for frequency of service. A major port like Port Botany is able to offer frequent services to a wide network of international destinations. Frequent services reduce storage and inventory holding costs.

The ability of a port to operate as a transport system serving many exporters and importers is a significant factor driving low transport costs.

A typical feature of an efficient transport system is the use of a "hub". Container vessels (particularly from the major Shipping Alliances) provide the connections between Port Botany and other cities around the world. Road and rail links within NSW provide the “spokes” that carry a container to/from the destination/origin.

The scale economy savings promoted by a hub generally outweigh any additional transport distances travelled on some of the spokes from the hub. (That said, there will be a few niche trades than Newcastle and Port Kembla may be able to attract.) The hub promotes consolidation and concentration of activity. It increases the utilisation of transport vehicles and provides significantly greater frequency of connection.

The location of the hub is crucial. The hub should be located approximately in the centre of the geographical location it serves, in order to minimise the tonne-kilometres on the network of spokes. Locating a hub at an extremity of the geographical service area, such as Newcastle or Port Kembla may reduce the length of a few spokes to the north or south, but overall tonnes-kilometres along the spokes increase.

The frequency of service provided by a hub is very important – by using a hub it is possible to consolidate transport services into a high frequency service, rather than having less frequent services to multiple ports. For importers and exporters of perishable items, frequency allows access to customers and markets which may not have been viable with a less frequent service.

6.6.2 International shipping trends

The global trend in container shipping is to lower unit costs by operating larger vessels, having fewer port calls and larger cargo exchanges in each port, consistent with retaining market share. These trends support the further concentration of container traffic in Port Botany.

The structure of the stevedoring industry around the Australian coast also lends itself to further development at the existing terminals, where greater economies of scale in this capital intensive industry can be achieved, than spreading resources to terminals operating at less than capacity.

6.6.3 Seasonal Considerations

The few trades where Newcastle has a land transport advantage (such as cotton) tend to be the heavily seasonal trades. Virtually all the cotton trade occurs in the June and September quarters each year. Even if Newcastle was successful in winning the cotton trade (worth around 25,000 TEU per year plus empty container returns), it would result in extremely high levels of activity for a few months of each year but labour and capital would remain idle for much of the rest of the year. If Liner shipping services were carrying the trade (as they do now through Port Botany) they would not find it profitable to schedule regular calls through the port with such an uneven cargo profile.

The large number of containerised commodities traded through Port Botany each has a different seasonal characteristic, which average out to a large degree, providing a more even stream of trade throughout the year, resulting in better utilisation of labour and capital.

6.6.4 Directional Considerations

The trades where Newcastle is more competitive in terms of land transport, are predominantly exports. This generates several logistic problems for shipping lines. For a vessel to pick up a load of exports it either has to enter port with a load of imports (preferable) or arrive empty. A ship loaded with imports would prefer to call into Port Botany (because it has a natural advantage to service imports). As noted earlier, the import trade dominates exports for NSW and a vessel cannot afford to make stops in both Port Botany and Newcastle, leaving Port Botany as the rational choice for a shipping operator.

The most important point to stress in this analysis is that there is a far more complex system involved than simply the land transport cost involved in exporting a commodity by container. Back loads of imports, frequency of service, the extent of repositioning empty containers and seasonal variance all need to be considered when analysing competitive advantages.

The same points of analysis concerning Newcastle can be made about Port Kembla. There, our modelling shows that certain commodities – rice from the Riverina – might be cheaper to land transport to Kembla than Port Botany (but even less to go to Melbourne), but the same factors – back loads of imports, frequency of service, empty containers and seasonal variance all need to be considered and count against Kembla handling large overflow volumes of Sydney freight, if Port Botany did not have sufficient capacity.

6.7 Commercial Considerations

Notwithstanding the above issues, there are examples of regional ports competing successfully with major capital city ports for a share of container trade.

For example, in New Zealand, the Port of Tauranga successful won the ANZDL trade from the Port of Auckland through a rail shuttle link between Tauranga and an inland port ("Metroport") located in the industrial area of South Auckland. The success of this operation was based initially on the availability of Tranzrail rollingstock, at a competitive price, over the weekend – timed neatly to suit the ANZDL services. Later investment was made to provide rolling stock throughout the week. Thus, whilst an analysis based on distance, time and price issues would indicate this option would not be viable, other issues come into play.

It is not unreasonable to assume that some similar arrangements could occur to allow Newcastle to attract a modest share of Sydney's container trade. For this to be sustainable, it would need to attract sufficient volume for a viable terminal operation.

In summary, while the Scenario B and Scenario C demand forecasts from Chapter 4 may be difficult for Newcastle and Port Kembla to achieve, they are still scenarios worth considering in contingency planning for Port Botany.

6.8 Competition with Major Ports

The discussion thus far has concentrated on competition between Port Botany and intrastate alternatives such as Newcastle and Port Kembla.

A more considerable, though still very moderate threat is competition from the other two major East Coast ports, Melbourne and Brisbane.

Competition with Newcastle tends to focus on land bridging. There are also examples of some trades coming through Brisbane and being transported by road to the Sydney market. Very little land bridging is thought to occur in the form of cargo shipped through the Port of Melbourne being transported by road to the Sydney market. Landbridging of cargo from Queensland to Sydney as a means of centralising export cargoes (e.g. meat to North America) has been a common practice for many years. There is some evidence, in the form of 10% p.a.

container growth rates through Brisbane, that the extent of this landbridging is decreasing as Brisbane attracts more direct calls. Queensland sourced/destined freight is estimated to now constitute only a few percentage points of total Port Botany trade.

Land bridging is not the major threat Port Botany faces from Brisbane and Melbourne in the longer term. The greater threat to growth in greater Sydney is that these ports may be able to attract industry to locate their activities in Melbourne or Brisbane. This would result in not only the loss of potential growth in trade at Port Botany, but also the loss of employment and investment in the Sydney basin as well.

When looking ahead to the next 25 years, many decisions will be made by many companies looking to expand a factory or open new manufacturing plants. These decisions will be influenced by the competitiveness of Sydney as a location for businesses. For these companies it will be a decision to locate in Sydney and trade through Port Botany or to locate in Melbourne and Brisbane and trade through those ports. If Port Botany was constrained it is likely to also constrain investment and employment growth in the Sydney basin, with companies choosing to locate instead in Melbourne (or Auckland, or elsewhere in South East Asia).

The main competitive threat is that a company would rather relocate to Melbourne or Brisbane than land bridge through Newcastle. Hence, NSW as a whole would suffer if its major trading port was to become capacity constrained.

7. Economic Impacts of Constrained Trade

A modest amount of congestion can be tolerated, given the high cost of providing additional port capacity. That said, congestion and queuing costs start to increase exponentially once capacity limits are reached and soon become a major cost imposed on trade. The costs of congestion and queuing, which are avoided if additional capacity is developed, could amount to over $100 per TEU by 2020 (in current dollars).

Although some industries may relocate from Sydney to Newcastle or Port Kembla, the more significant competitive threat for Sydney is that over the longer term, business will decide to relocate or establish new factories in Brisbane or Melbourne. A firm deciding where to build a new warehouse or factory, finding Sydney was congested could prefer to locate in Melbourne or Brisbane (or Auckland or elsewhere in South East Asia) rather than land bridging to Newcastle.

As future throughput increases beyond 1.6 million TEU in 2010-11 (under the medium trade growth scenario), additional port infrastructure will be needed to relieve congestion (such as ship queuing, double handling and truck waiting), resulting in a lower-cost supply chain. This will provide substantial cost savings to all trade handled through Port Botany.

That is, it is oversimplifying to describe the proposed developments in Port Botany as only accommodating future growth. Rather, the proposed developments have a dual purpose – handling existing throughput more efficiently ***and*** *accommodating future growth.*

Providing sufficient capacity to ensure there is never any queuing or congestion tends to result in an oversupply of capacity. A modest amount of congestion and queuing during peak periods or peak seasons can be tolerated in the short term, when compared with the substantial cost of providing additional transport infrastructure – not only for ports but for airports, roads and railways.

That said, as throughput grows, there quickly becomes a point where the cost of congestion and delay outweighs the cost of providing of additional capacity. Once port capacity limits are reached, double handling, ship queuing and truck waiting start to increase exponentially. These costs eventually end up as higher prices paid by consumers of imported goods or lower earnings by producers of exported goods.

Furthermore, a port system operating at full capacity has little ability to absorb a minor traffic accident, a brief work stoppage or an equipment break down. A minor incident in a system running at full capacity can cause operations to grind to a halt and can take several weeks to clear the backlog.

The analysis in the previous chapters suggested the appropriate capacity of the existing Port Botany facilities for planning purposes is around 1.6 million TEU per annum in 2010-11 and around 1.7 million in 2014-15, under the modest productivity growth scenario. Without the

proposed development, when Port Botany throughput reaches 1.6 million TEU per annum in 2010-11 (under the medium trade growth scenario), there will already be modest levels of congestion, and quite congested conditions in peak periods. As demand increases above this level, congestion and delay costs will increase exponentially.

7.1 Cost Savings

There are two major benefits from providing additional port infrastructure:

1. Allowing growth in trade to be accommodated without constraint
2. Allowing the existing trade volumes to be handled more efficiently

This report has thus far concentrated on the first of these benefits – providing the necessary capacity to accommodate future growth. This section briefly examines the benefit provided by being able to handle existing cargo more efficiently.

Allowing for modest productivity improvements over time, the current Port Botany terminal facilities will reach an optimal level of operations at around 1.6 million TEU in 2010-11 and 1.7 million in 2014-15 (plus 50,000 TEU per annum through Port Jackson). Throughput is expected to reache 1.6 million TEU in 2010-11 under the medium trade growth scenario, after which port capacity constraints will start to impact on trade growth (that is, trade is expected to grow at a faster rate than productivity). Furthermore, all the trade that ***does*** take place will be paying a premium price due to the congestion caused by inadequate capacity.

For example, trade is expected to reach 1.9 million TEU by 2014-15 (under the medium trade growth scenario). This would be well above the optimal level for the existing facilities, resulting in substantial congestion costs incurred by all 1.9 million TEU traded through Port Botany, not just the incremental 200,000 TEU over and above the recommended capacity of 1.7 million TEU by 2014-15.

Additional port infrastructure will relieve congestion (such as ship queuing, double handling and truck waiting) and result in a lower-cost supply chain.

As a result, it is oversimplifying to describe the proposed developments in Port Botany as only accommodating future growth. Rather, the proposed developments have a dual purpose – handling the existing throughput more efficiently and accommodating future growth.

Based on the Maunsell capacity analysis and the trade forecasts presented in previous sections, Access Economics estimated the likely cost saving generated per TEU as a result of additional port facilities, with the results summarised in Table 7.1.

Table 7.1 Cost saving ($ per TEU) generated by additional capacity

	2004-05	2009-10	2014-15	2019-20	2024-25
High growth	0	33	90	113	104
Medium growth	0	31	83	106	106
Low growth	0	29	75	96	98

Costs are in real terms, based on yaer 2000 prices

Table 7.1 indicates the cost impost per TEU of ***not*** allowing for extra berth and terminal space in Port Botany.

In an EIS it is important to consider the appropriate "do nothing" scenario for comparing the incremental impact of adding capacity in Port Botany. The "do nothing" scenario reflects the most likely outcome if the proposed additional capacity in Port Botany was not constructed.

As discussed in Chapter 6, Newcastle and Port Kembla are unlikely to handle substantial overflow from Port Botany.

A more likely scenario is that investment and employment will divert to Queensland and Victoria (or even Auckland or elsewhere in South East Asia) at the expense of NSW. Rather than choose between a congested Sydney or a land bridge to Newcastle, companies may choose the third option of locating interstate or overseas.

By the year 2014-15, the proposed developments could reduce congestion costs in the supply chain by $75 to $90 per TEU depending on the productivity scenario. This is a real cost saving that would benefit exporters and importers (and ultimately consumers) in the form of lower shipping, stevedore, port and truck charges.

By the year 2019-20, the costs of congestion in a capacity constrained Port Botany could reach $96 to $113 per TEU depending on the productivity scenario (compared with the reduced congestion if the proposed developments proceed).

The average TEU contains goods worth around $25,000. Export containers tend to be heavier, but slightly lower in value per tonne (around $2,170 per tonne and 11.5 tonnes per TEU), while import containers tend to be lighter, but higher in value per tonne (around $3,125 per tonne and 8 tonnes per TEU). Of all TEU transported, around 15% to 20% are usually empty. As a result, the saving of around $100 per TEU is approximately $115 per full TEU (since the full TEU is the one that pays for returning the empty).

Please note that a comprehensive benefit-cost analysis of the proposed developments is beyond the scope of this paper, but is addressed elsewhere in the EIS. That said, this paper provides several key inputs into the economic evaluation of the proposed developments.

8. References

Access Economics (2002), *Business Outlook*, Canberra

Australian Bureau of Statistics (2002), *International Merchandise Trade*, Catalogue No. 5422.0, Canberra

Bureau of Transport and Communications Economics (1992), *Shore Based Shipping Costs of Containerised Cargo: A 1991 Update*, Information Paper 36, BTCE, Canberra

Bureau of Transport and Regional Economics (2002), *Waterline*, BTRE, Canberra

Maunsell Australia (2002), *Simulation of Shipping Movements and Berth Utilisation at Brotherson Dock, Port Botany*

Maunsell Australia in association with Drewry Shipping Consultants (2002), *Forecast Development of Container Ship Size in the Main Australian Trades*

Melbourne Port Corporation (2001), *Annual Report*

Newcastle Port Corporation (2002), *Annual Report*

NSW Department of Transport (undated), *Action for Transport 2010, an Integrated Transport Plan for NSW*, NSW Government

Port Kembla Port Corporation (2002), *Annual Report*

Port of Brisbane Corporation (2001), *Annual Report*

Productivity Commission (1998), *International Benchmarking of the Australian Waterfront*, Research Report, Ausinfo, Canberra, April

Sydney Ports Corporation (1997), *2020 Port Master Plan for Botany Bay and Sydney Harbour*, SPC and Maunsell

Sydney Ports Corporation (2002), *Annual Report*

Maunsell (2002) *Traffic and Landside Transport Study for Proposed Port Botany Expansion*