

Summary of key outcomes:

The proposed Port Botany Expansion would have a range of social impacts. At the Sydney metropolitan level, the proposal would result in an increase in employment opportunities during both the construction and operation of the new terminal. However, at a local level the social impacts are more complex.

Social impacts on the local Port Botany community, and the community of people using the recreational facilities near the port during the construction and operation of the Port Botany Expansion, would include some restriction on recreational use of Foreshore Beach, Penrhyn Estuary and parts of Botany Bay between Brotherson Dock and the Parallel Runway. The proposal would alter Foreshore Beach and Penrhyn Estuary, but improvements to public open space and recreational facilities would minimise the impacts on the recreational amenity of the area.

There would also be impacts associated with an increase in traffic and noise levels. Noise, traffic and other impacts outlined in this chapter would be largely mitigated by measures outlined in detail in the various chapters in this EIS.

26.1 Introduction

Social impacts are defined as changes in the structure and function of social ordering that occur in conjunction with or as a result of an environmental, technical or social innovation or alteration. Social impacts may refer to changes in peoples' way of life, culture, tradition, community structure, cohesion or stability. Social impacts may be categorised as quantitative, such as likely effects on future population growth and employment, or qualitative, such as community perceptions toward the proposal, risk concerns and likely effect on cohesion.

This chapter describes the characteristics of the community affected by the proposal and the potential impacts of the Port Botany Expansion on this community. Mitigation measures are also identified to safeguard the social environment.

This chapter presents a summary of the social impact assessment undertaken by Manidis Roberts titled *Proposed Port Botany Expansion Social Impact Assessment* which is provided in **Appendix U**.

26.2 Methodology

Social impacts of the Port Botany Expansion have been assessed by examining the social characteristics of the area, both in a qualitative and quantitative sense.

The social impact assessment focused primarily on four communities that would be potentially affected by the Port Botany Expansion. These communities were:

- people that use Foreshore Beach and Botany Bay for recreation activities such as fishing and boating;
- the local Port Botany community with immediate proximity to the proposed expansion;
- the LGAs of the City of Botany Bay and Randwick City Council, the two Councils which adjoin Port Botany; and
- the Sydney metropolitan community as a whole.

Social profiles for the City of Botany Bay and Randwick City Council LGAs were determined from the Australian Bureau of Statistics (ABS) 2001 Census data.

The character, values, and structure of the communities likely to be impacted by the proposal were based on consultations with the community, which included focus group sessions, community workshops, direct consultations and submissions. These consultation activities also provided an overview of the potential impacts and mitigative measures which may be appropriate to apply to the proposed expansion. Consultation activities are described in more detail in **Chapter 12 Community Consultation**.

26.3 Existing Environment

26.3.1 Community Descriptions

Recreational Users

Foreshore Beach users and the Botany Bay fishing and boating community are the main users of facilities surrounding the port likely to be impacted by the proposal.

Foreshore Beach users include individuals, families, dog walkers, runners, swimmers, windsurfers, paddle and surf skiers from within and beyond the Botany and Randwick City LGAs, such as, the LGAs of Marrickville, Rockdale, Bankstown and Campbelltown.

A focus group held with users of Foreshore Beach indicated that Foreshore Beach's lack of surf appeals to and attracts people to the area. The lack of built concrete structures along Foreshore Beach and its relative length are other key features which attract users. Unlike the majority of Sydney's beaches, Foreshore Beach is a beach where dog walking is permitted. This feature appeals to many members of the community.

Submissions from the community have indicated that windsurfers use the section of the Bay between Brotherson Dock and the Parallel Runway, and use Foreshore Beach as a launching location.

The fishing and boating community are active users of the boat ramp in Penrhyn Estuary. The fishing and boating community includes many formally organised groups as well as lone fishermen. Groups include the South Sydney Amateur Fishing Association, ANSA Recreational Fishing Alliance NSW, Botany Bay Yacht Club, Botany Bay Fin Fishermen, St George and Sutherland Shire Anglers Club, Sutherland Shire Fishing Club, Botany RSL Fishing Club, Brighton Le Sands Amateur Fishermen's Association, Caringbah Anglers Club and Kurnell Catamaran Club.

Local Port Botany Community

The local Port Botany community is the community residing in the area adjacent to the proposed port expansion. This area is bounded by Foreshore Road, Southern Cross Drive, Botany Freight Rail Line, Stephen Road, McPherson Street, Beauchamp Road and Botany Road. This is the community most likely to be directly affected by the proposal.

The local Port Botany area includes a mix of both residential and industrial land uses. Recreational land uses accommodated within this area include Sir Joseph Banks Park, Boralee Park, Foreshore Beach and Botany Public Golf Course. Many industrial land uses are also located in the area as described in **Chapter 14 Land Use**.

Relevant community groups active in the area include Botany Environment Watch, Botany and Eastern Region Environmental Protection Agency, Botany Bay Planning and Protection Council, Botany Business Enterprise Centre, Botany Historic Trust, Randwick and District Historical Society, Port Botany Neighbourhood Consultative Group, Save Botany Beach, South Ward Action Group, Prince Henry Hospital Group, La Perouse Precinct Committee, Friends of La Perouse Museum, La Perouse Local Aboriginal Land Council, AMCOR Community Consultative Group, Randwick Botany Harriers, Mascot Main Street and the Senior Citizens Advisory Committee.

City of Botany Bay and Randwick City LGAs

The existing port facility is located within the LGAs of Botany and Randwick. These communities comprise residents, businesses and groups located in the suburbs of Banksmeadow, Botany, Daceyville, Eastgardens, Eastlakes, Hillsdale, Mascot, Daceyville, Rosebery, Clovelly, Randwick, Kensington, Kingsford, Coogee, Maroubra, Pagewood, Matraville, Chifley, Malabar, Little Bay, Phillip Bay and La Perouse.

Sydney Metropolitan and State-Wide Community

The proposed expansion has the potential to provide far reaching economic benefits which would affect the community throughout the Sydney metropolitan area and NSW generally. As demonstrated in **Chapter 27 Economic Impact Assessment**, port facilities are an integral part of the regional economy, so that any change to these facilities would have economic consequences, in terms of economic growth and employment, for Sydney as a whole.

26.3.2 Social Profile

A social profile for the City of Botany Bay and Randwick City LGAs has been developed, based on 2001 ABS census data, to provide information about the makeup of the community surrounding Port Botany, and place it in context with the surrounding Sydney region.

A summary of the socio-demographic characteristics of the City of Botany Bay and Randwick City LGAs is presented below, and a detailed social profile is contained in **Appendix U**:

- **Population** – The City of Botany Bay had a population of 35,897 people in 2001, a 3.4% growth increase since 1996. Randwick City had a population of 121,497 people in 2001, a 2.2% growth increase since 1996. These growth rates are slower than the Sydney average of 6.8% population growth since 1996.
- **Structure of the population** – The City of Botany Bay's and Randwick City's male-female ratio in 2001 were both approximately 49:51, which is close to the Sydney region average.

In 2001, the City of Botany Bay had a slightly older population than the Sydney average with greater proportions of the population in the 45-64 and 65 and over categories. The largest age category within the City of Botany Bay were adults of 25-44 years. The proportion of all age categories was similar to the Sydney region overall.

Randwick City had a much larger proportion of younger adults than the Sydney average, but lower proportions of school-aged children. The high number of young adults is likely to be influenced by the presence of the University of NSW.

- **Culture and ethnicity** – In 2001, the City of Botany Bay had a small Aboriginal and Torres Strait Islander population of approximately 560 people, or 1.6%. This was slightly higher than the Sydney average of 1.0%. Randwick City had 1,351 people, or 1.1%, who identified as being of Aboriginal or Torres Strait Island heritage. This is similar to the Sydney region average.

In 2001, 49% of the City of Botany Bay residents and 56% of Randwick City residents were born in Australia. These proportions are lower than the Sydney average of 62.2%.

- **Household type and tenure** - The mean household size in the City of Botany Bay is 2.7 persons, which is the same as the Sydney average. In 2001, 49.8% of families occupying private dwellings consisted of couple families with children, 28.5% were couples without children, 18.9% were one parent families and 2.7% other families. Compared with the Sydney average, the City of Botany Bay has a higher proportion of sole parent families and other families, and a lower proportion of couples both with and without children.

In 2001, 54.2% of all occupied private dwellings were either fully owned or being purchased by the occupier, while 36.6% were being rented. The City of Botany Bay has a lower level of home ownership than the Sydney region generally, which averages 62.7%, and a higher than average rental sector, which is 29.0% in the Sydney region as a whole.

The mean household size in Randwick City is 2.4 persons, which is lower than the Sydney average of 2.7 persons. In 2001, 42.3% of all families in occupied private dwellings consisted of couple families with children, 36.8% couples without children, 15.9% one parent families and 5.0% other families. Compared with the Sydney average, Randwick City has more other families, sole parent families and couples without children, and a smaller proportion of couples with children.

In 2001, 49.0% of all occupied private dwellings were either fully owned or being purchased by the occupier, while 41.8% were being rented. Randwick City has a lower level of home ownership than the Sydney region generally and a higher than average rental sector.

- **Employment** - In 2001, 16,001 people were employed in the City of Botany Bay (8,863 males and 7,138 females). This represents 94% of the labour force, which is an increase from 91.8% in 1996 and 87.7% in 1991. Of these, 68.6% (6,764 males and 4,212 females) were working full time and 27.7% (1,775 males and 2,656 females) were working part time. The remaining 6.0% of the labour force were unemployed. These proportions are all similar to the Sydney region figures.

In the 2001 Census, 58,322 people in Randwick City were employed (30,260 males and 8,062 females). This represents 94.6% of the labour force. Of these, 67.5% (22,884 males and 16,495 females) were working full time and 29.9% (6,549 males and 10,915 females) were working part time. This represents a rise in employment levels from 93.5% of people being employed in the 1996 Census and 90.7% in the 1991 Census. The remaining 5.4% of the labour force were unemployed. These proportions are all similar to the Sydney region figures.

- **Industry of employment** - There is a slightly higher proportion of people employed in the manufacturing, and retail and trade industries in the City of Botany Bay compared to the Sydney region as a whole, and a slightly lower proportion of people working in all other industries.

In the 2001 Census, 5.1% of people were employed in the education industry, 5.2% in the construction industry, 8.5% in the health and community services industry, 11.0% in the property and business services industry, 13.2% in the manufacturing industry and 14.2% in the retail trade industry.

Randwick City has a lower proportion of people working in the manufacturing, construction and retail trade industries than Sydney generally, and a higher proportion of people working in the property and business services, education and health and community services industries.

In the 2001 Census, 5.3% of people were employed in the construction industry, 7.3% in the manufacturing industry, 8.5% in the education industry, 10.5% in the health and community services industry, 11.4% in the retail trade industry, and 16.0% in the property and business services industry.

- **Income** – In 2001, the City of Botany Bay residents aged 15 years and over had a median weekly individual income of \$300 - \$399 per week which is lower than the Sydney average of \$400 - \$499 per week. Randwick City residents aged 15 years and over had a median weekly individual income of \$400 - \$499, the same as the Sydney average.

In summary, population growth rates for the City of Botany Bay and Randwick City LGAs are lower than the Sydney average population growth rate since 1996.

The male to female ratios in both LGAs are close to the Sydney region average and the proportion of all age categories are similar to the Sydney region overall.

Culture and ethnicity of both LGAs is similar to the Sydney region average, however, the proportion of residents born in Australia is lower than the Sydney average.

The City of Botany Bay has a higher proportion of sole parent families and other families, and a lower proportion of couples both with and without children compared with the Sydney average. Randwick City has more other families, sole parent families and couples without children, and a smaller proportion of couples with children compared with the Sydney average.

Both the City of Botany Bay and Randwick City LGAs have a lower level of home ownership than the Sydney region generally, and a higher than average rental sector.

Employment levels are similar to the Sydney region figures. Individual income for the City of Botany Bay is lower than the Sydney average, however, the individual income for Randwick City residents is the same as the Sydney average.

26.3.3 Implications of the Social Profile

The social profiles of the City of Botany Bay and Randwick City LGAs outlined above generally have similar social characteristics to the average Sydney demographic. The social profile does, however, indicate that the City of Botany Bay has a slightly less prosperous population than the Sydney average, in terms of income and employment levels.

The social profile indicates that the Port Botany Expansion would not impact significantly on people in the Randwick and Botany LGAs due to their socio-demographic status. As discussed in Section 26.5, the nature of impacts on the community would be determined by residents' proximity to the new terminal and/or their preferred recreation activities.

The Port Botany Expansion would not have a discernible impact on the social profiles of the two local government areas. Although the proposed expansion is a large infrastructure project, with large employment effects, the existing industrial and employment base is very substantial. Increased employment would be accommodated in a wide region around the port without substantial effects on the adjacent local government areas and their social profiles.

26.3.4 Community Characteristics

Community Cohesion

Community cohesion is demonstrated by the existence of, and participation in, social and community facilities, organisations, and structures which bring people and groups together. It is essentially a qualitative factor, but one which has a crucial effect on the experience of living in a particular locality. Where there is cohesion, people generally say they like living there, and they exhibit loyalty to the local community.

The absence of facilities for community interaction, or indications of social disharmony would, conversely, suggest poor community cohesion.

The communities of the City of Botany Bay and Randwick City LGAs are cohesive communities despite their cultural diversity. They both have plentiful and well used community facilities as well as active community organisations. The local Port Botany community would also be described as a cohesive community as they consider themselves to be a community who join together for a cause.

The people who use Foreshore Beach are generally not a cohesive community as they travel from throughout the region to this area, and pursue their recreational activities individually. However, the fishing and boating community displays a high level of activity and coordination within its community of interest.

Local Values

In focus group sessions, local residents, Foreshore Beach users, members of the fishing and boating community and members of environment groups identified what they value about the Botany Bay area.

The most prevalent local values include:

- pride in the fame of Botany Bay, and its place in Australian history;
- the essentially natural looking/concrete free character of the Foreshore Beach area, which is not overcrowded;
- Penrhyn Estuary, because of its ecological significance and habitat for shorebirds;
- the suitability of the Bay for recreational boating, fishing, dog walking and windsurfing activities which are seen to be part of the local and regional culture; and
- the Bay's long-standing history and the community's access to the waters of the Bay and surrounding foreshore environment. The Bay has been the subject of many local campaigns to preserve the Bay for future generations.

Local Attitudes to Change

There has been some community opposition to Port Botany since it was established in the 1970's. Community opposition to changing the character of the Bay and its surrounds continues today. Opposition to the proposed expansion is partly based on concern about the cumulative impact of industrial development in the Botany Bay region, on both the natural and social environment.

26.4 Sydney Ports Corporation Community Involvement

Container operations at Port Botany have been carried out since 1979. Sydney Ports Corporation and its predecessor's contribution to the creation and maintenance of community facilities in the Port Botany area has included:

- the creation of Foreshore Beach from past port reclamation activities;
- landscaping the foreshore corridor following these reclamation activities;
- providing and maintaining the popular public area of Prince of Wales Drive and Molineux Point. This was recently enhanced with a viewing platform;
- providing the existing public boat ramp at Penrhyn Road;
- sponsorship and funding of local events and projects such as the Botany Bay Regatta, Golf Days, Sabot National and Sabot Week Regatta Botany Bay, Botany Bay Gift and Fun Park, and Botany Bay Community Safety Team Bus;
- forming the Port Botany Neighbourhood Consultative Group which regularly meets with community representatives to share information about port activities and developments;
- forming the First Port Club. This club comprises individuals associated with Botany Bay, both civic and commercial. The club's aim is to promote and facilitate communications of mutual interest;
- participating in the Botany Business Enterprise Centre and Bizwatch;
- sponsoring the Randwick City Awards for Business Excellence;
- chairing Botany Bay Coastal Management Committee meetings. The committee comprises representatives from the community, local government and other government agencies with an interest in the foreshores of the Bay;
- providing an emergency response unit on duty 24 hours a day for incidents on the Bay including marine rescues, oil spill responses and small boat fires; and
- providing the coastal radio network service.

26.5 Assessment of Social Impacts and Mitigation Measures

26.5.1 Public Open Space and Recreational Facilities

During the community consultation process, community members emphasised the importance of Foreshore Beach, Penrhyn Estuary, the Penrhyn Road boat ramp and waters of Botany Bay for recreational activities and as regional open space sites.

Community members raised concerns about how changes to the form of Foreshore Beach, Penrhyn Estuary and Botany Bay would affect their function as recreational facilities. Particular concerns included continuation of dog-walking opportunities along Foreshore Beach, restriction on access to areas of the beach and Penrhyn Estuary, the impact of the new terminal and associated infrastructure on the ambience of Foreshore Beach, the location of the boat ramp in the centre of the beach and the impact of the

reclamation work and development of road and rail bridges on the ecology of Penrhyn Estuary. The suitability of the existing water quality for swimming and fishing was also of concern.

The fishing and boating community saw the Port Botany Expansion as an opportunity to improve the existing boat ramp facilities.

Construction

The impact on the public open space and recreational amenity in the vicinity of the port would be the most significant social impact of the construction phase of the project. The dredging and construction work associated with the proposal would likely affect the short term accessibility to parts of Foreshore Beach, Penrhyn Estuary and areas in the northern part of Botany Bay.

Foreshore Beach is a popular recreational location, for both the local and regional communities. Foreshore Beach recreational users include individuals, families, dog walkers, runners, swimmers, windsurfers, paddle and surf skiers and other miscellaneous users. During construction of the new terminal, access to parts of the beach would be restricted, although some part of the beach would always be available for public use.

Construction activities would impact on windsurfers and swimmers who currently undertake these activities in the area of the Bay in front of Foreshore Beach. Whilst construction activities are being undertaken the ability of Foreshore Beach users to undertake these activities would be impeded, although access to the greater part of the Bay would always be maintained.

Public access to Penrhyn Estuary would be restricted during construction of the proposed new terminal and enhancement of the ecological habitat in the Estuary. This would reduce the amount of accessible public open space in the area.

A public boat ramp would be available for access to the wider Bay at all times during construction of the new terminal.

Operation

Operation of the new terminal would impact upon the form of, and access to, parts of Foreshore Beach, Penrhyn Estuary and areas in the northern part of Botany Bay.

The proposed design for the Foreshore Beach area retains the majority of the existing beach and enhances the foreshore landscaping, so recreational activities which currently occur on the beach would still be able to occur once the new terminal is in operation. Walking and cycling opportunities would be enhanced by the creation of a pedestrian/cycle path along Foreshore Road.

Recreational water activities, which currently occur in the area of the Bay in front of the beach, would be excluded for public safety, ecological and port operational reasons along the channel between the beach and the new terminal. Water sports such as windsurfing and swimming would still be possible at Foreshore Beach from the new boat ramp up to the Mill Stream. No specific aquatic events would be affected by the proposed development as these occur in other parts of the Bay.

The ecological habitat of Penrhyn Estuary would be enhanced to support the existing shorebird population. Public access to the area would be restricted to a boardwalk and viewing platform in order to prevent people impacting on the ecological habitat. Whilst this means that people would no longer be able to access all the

parts of the Estuary, it would provide opportunities for visitors to view shorebirds without impacting on the ecological habitat, thereby improving nature based recreation in the area.

The existing boat ramp would be removed and a new ramp and associated facilities constructed in a new location in the middle region of Foreshore Beach. The new boat ramp would provide an enhanced facility (four lanes instead of two lanes at the existing boat ramp) for the fishing and boating community, so the overall impact would be a positive one. Recreational craft would be directed to the wider Bay via a marked navigation channel between the Parallel Runway and the new terminal.

The results of numerical modelling show that the Port Botany Expansion would have little impact on the hydrodynamics and coastal processes within Botany Bay (refer to **Chapter 15 Hydrodynamics and Coastal Processes**). The proposal would, therefore, not impact on other recreational areas in the Botany Bay region.

26.5.2 Visual Amenity

The visual impact of the new terminal from nearby areas was raised as an issue during community consultation. Specifically, issues identified included a negative impact on the current ambience of Foreshore Beach, the appearance of the noise wall, the height of cranes on the new terminal and the appearance of the vegetated area between Foreshore Road and the beach.

Construction

The construction of the new terminal and associated infrastructure and the presence of a range of construction equipment would have a visual impact on views of Port Botany. Construction activity would affect visual amenity from the land; including Foreshore Beach, Penrhyn Estuary, the existing boat ramp and to some extent from Botany Golf Course and Sir Joseph Banks Park; from the water (Botany Bay); and from the air (Sydney Airport). This impact on visual amenity would be significant in areas close to the construction site. This would have an adverse impact on the recreational users of Foreshore Beach and residents in the local Port Botany area due to reduced amenity.

Stockpiling of fill would be minimised and areas of open space would be revegetated as soon as possible in the construction process to minimise the visual impact on recreational users of Foreshore Beach and residents of Port Botany.

Further details on the assessment of the impacts of construction on visual amenity are provided in the **Chapter 25 Visual Impact Assessment**.

Operation

The visual impact of the Port Botany Expansion would vary with distance from the port. From regional views, the proposed expansion would generally have a low visual impact due to the long viewing distances. The proposed expansion would be seen within a family of port and airport related buildings and structures. From the surrounding local residential areas, views of the proposed expansion would be impeded by existing vegetation and structures. From the immediate vicinity, the expansion would impede some views of the Bay.

When viewed from the air, the proposed expansion would be visible. However, it would be set within the context of the surrounding port and airport which are similar developments.

While the proposed port expansion fits within the visual context provided by surrounding land uses, the new terminal would impact on views of Foreshore Beach users.

Further details of the visual impact of the Port Botany Expansion are presented in **Chapter 25 Visual Impact Assessment**.

The visual impact of the proposed expansion would be mitigated by incorporating the following elements into the design of the new terminal:

- revegetating the open space areas surrounding the new terminal;
- limiting the height of cranes and other terminal equipment; and
- selecting colours and materials to minimise reflectivity and to blend with the colours of the existing port related structures on the Patrick Stevedores and P&O Ports terminals.

26.5.3 Air Quality

During community consultation, concerns were raised about air pollution from operating diesel machinery and increased traffic generated by the Port Botany Expansion.

Construction

Dispersion modelling of dust emissions from construction of the new terminal shows that dust deposition at residences in the vicinity of the new terminal would comply with EPA criteria. Therefore, there would not be a significant impact on surrounding land uses or the health of the local Port Botany community from dust generated during construction.

Although no adverse impact on air quality would result from the construction of the new terminal, normal earthworks and construction dust mitigation practices would be incorporated into the Construction EMP to ensure that acceptable air quality is maintained.

Further details on the assessment of the impacts of construction on air quality are provided in the **Chapter 23 Air Quality**.

Operation

The potential for adverse air quality impacts from the operation of the proposed new terminal combined with the P&O Ports and Patrick Stevedores terminals, when at capacity, would be minimal. There are expected to be only marginal increases in particulate matter, nitrogen dioxide, sulphur dioxide and carbon monoxide concentrations in surrounding areas, with modelling results showing no exceedences of the NSW EPA criteria within residential areas in Port Botany, or at sensitive receivers such as schools and hospitals. In terms of greenhouse gases, the future operation of an expanded Port Botany is shown to result in lower emissions when compared with the “Do Nothing” scenario.

Notwithstanding the fact that the proposed expansion is shown to result in negligible impacts, the new terminal would be designed and constructed such that it could support the use of alternative energy for ships at berth (i.e. shore power), should ships be able to accept such power in the future. This would reduce ship emissions in the local area.

Further details on the assessment of air quality impacts are presented in **Chapter 23 Air Quality**.

26.5.4 Water Quality

Feedback obtained during community consultation activities indicates that the community is concerned about the water quality of Botany Bay. Community members expressed concern that the construction activity may disturb contaminants, both in the Penrhyn Estuary area and also in the material being dredged from the Bay. They were concerned that this disturbance would result in water quality effects on the local waterways, which could affect swimming, boating, fishing and other water borne activities.

The importance of sufficient flushing of Penrhyn Estuary was raised during consultation activities. Community members expressed concern that the new terminal could inhibit the ability of the Estuary to flush out the flows of the Springvale and Floodvale drains and that this could result in sedimentation and concentration of pollutants in the Estuary.

Construction

Dredging works associated with the Port Botany Expansion would cause some turbidity in Botany Bay. Turbidity would be mitigated through the use of a silt curtain around the dredge discharge area to prevent plume development. The use of a cutter suction dredge and the placement of dredged material directly at the required location would also reduce turbidity. **Chapter 16 Hydrology and Water Quality** outlines further mitigation measures to minimise the impact of the construction of the Port Botany Expansion on turbidity and water quality.

Due to the location and concentration levels of existing contaminants, mobilisation of contaminants during dredging of sediment in Botany Bay would not pose a significant risk to aquatic organisms or human health. Maintenance of a 130 m channel through to Penrhyn Estuary to ensure tidal flushing during construction would also reduce water quality impacts. **Chapter 31 Ecotoxicology and Human Health** outlines further mitigation measures to minimise the impact of construction on water quality.

Operation

The quality of water in Penrhyn Estuary and in the area of the Bay near the mouth of the Mill Stream is currently affected by various pollution sources in the catchment, including faecal coliform concentrations that exceed primary and secondary contact recreation criteria. These pollutant sources are independent of the existing and future port operations.

As a result of the construction of the new terminal, tidal flushing in Penrhyn Estuary would be reduced and this is likely to result in increased siltation rates and nutrient and faecal coliform concentrations in both transient and ambient conditions as well as slight changes in temperatures and dissolved oxygen concentrations. Water quality would, however, be within guideline values during ambient conditions and the proposed development is not expected to significantly alter the risks to human health from recreational use of Foreshore Beach or risk to the environment.

Subject to a detailed assessment of upstream flooding, sediment traps would be installed at the outlets of the Springvale and Floodvale Drains to reduce the amount of litter and sediment entering the Estuary. The water quality of Penrhyn Estuary would be monitored to ensure that ambient nutrient concentrations do not exceed the recommended ANZECC guidelines.

The new terminal's stormwater management system would minimise contaminated runoff discharging into Botany Bay through a first flush and wastewater capture and treatment system. Further details on the assessment of hydrology and water quality impacts are presented in **Chapter 16** *Hydrology and Water Quality*.

The discharge of historically contaminated groundwater plumes in the area would increase the concentration of certain contaminants in Penrhyn Estuary. However, the proposed development would not affect the discharge of plumes resulting from industrial activity in the catchment. Possible increased risks to human health, due to increased concentrations of contaminants in the upper reaches of Penrhyn Estuary, would be offset by restricting public access of this area. Further details on the assessment of ecotoxicology and human health impacts are presented in **Chapter 31** *Ecotoxicology and Human Health Risks*.

26.5.5 Waste

During community consultation, concerns about waste management focused on the management of waste from ships.

Construction

Waste materials that would be generated during the construction of the new terminal would include construction materials, dredged material, road and rail waste, domestic waste, human waste, green waste, excavated soil and some contaminated material. Any build up of these materials on the construction site would have a negative impact on the visual amenity of the local Port Botany community and recreational users of Foreshore Beach and Botany Bay.

A Construction Waste Management Plan (CWMP) would be prepared as part of the Construction EMP for the Port Botany Expansion. The CWMP would outline ways to achieve waste minimisation and responsible waste disposal during construction of the new terminal.

Further details of the types and quantities of waste and waste management measures are provided in **Chapter 34** *Waste*.

Operation

A variety of waste materials would be expected to be generated during the operation of the new terminal. Any build up of these materials at the port could have a negative impact on the health and visual amenity of the local Port Botany community and recreational users of Foreshore Beach and Botany Bay.

A WMP would be prepared and implemented by the terminal operator(s) as part of the Operational EMP for the new terminal and would include initiatives for sustainable waste management.

All waste discharged by ships at the new terminal would be managed through established waste management practices.

Further details of the types and quantities of waste and waste management measures are provided in the **Chapter 34** *Waste*.

26.5.6 Employment Opportunities

During consultation, the community expressed the view that the new terminal would not require many staff due to increased automation of container handling operations. Concern was also expressed that jobs created by the Port Botany Expansion would not be filled by local residents.

Construction

An important social benefit of the construction phase of the Port Botany Expansion is that a substantial number of jobs would be created (refer to **Chapter 27 Economic Impact Assessment**).

The benefit of jobs created during construction would be felt throughout the Sydney metropolitan level as construction workers may come from throughout the metropolitan region to work at the construction site. However, as a large number of residents of the City of Botany Bay and Randwick City LGAs are currently employed in construction, manufacturing and retail occupations, there is the potential for local residents to gain employment as a result of the proposed expansion.

The average number of employees and contractors on site during construction would be approximately 60 people and the maximum number of employees and contractors on site is expected to be in the order of 160 people. This does not include any jobs created indirectly such as workers in the industries supplying materials to the port.

Operation

Operation of the new terminal is expected to generate a substantial number of jobs, which is an important social benefit. The number of people employed directly in the operation of the new terminal has been estimated at more than 1,100 by 2010, increasing to more than 3,700 by 2025. This does not include any jobs created indirectly eg workers in the industries supplying materials to the port. The total number of jobs generated both directly and indirectly by the operations of the new terminal is estimated to be more than 2,800 by 2010 increasing to more than 9,100 by 2025 (refer to **Chapter 27 Economic Impact Assessment**).

Economic benefits from the operation of the new terminal would be in the order of a direct total household income of about \$65 million by 2010, and over \$200 million by 2025. Total household income, both direct and indirect, would be over \$120 million by 2010 and over \$390 million by 2025 (refer to **Chapter 27 Economic Impact Assessment**).

26.5.7 Noise

Community consultation indicated that noise generated by the existing port and other activities in the area is currently an issue of concern for local residents. The community expressed concern that the new terminal would result in increased noise, which would impact on the amenity of the area. The community also raised concerns about increased noise from port related rail and road traffic.

Construction

Sources of noise during construction of the Port Botany Expansion would include dredging, piling and general construction activities. Dredging operations would take place 24 hours a day, seven days a week, and would meet all noise criteria including the night time criteria. Piling noise would be the loudest source of

noise and most likely affect recreational users of Foreshore Beach and some residential areas in local Port Botany area. This work would, however, only be undertaken during daylight hours.

Mitigation measures would be implemented to minimise the noise from construction activities. Further details of potential impacts of noise during construction, and ways in which such impacts can be mitigated are provided in **Chapter 22 Noise**.

Operation

Noise associated with operational activities of the Port Botany Expansion would potentially affect areas in close proximity to the port, generally the local Port Botany community and people using the recreation areas nearby.

The local community also expressed concern about the current noise and vibration impacts from the use of the Botany Freight Rail Line on nearby residences. There was concern that these impacts would increase as a result of the proposed new terminal.

Port Generated Noise

The predicted “average” noise levels from the new terminal would be below existing ambient levels at night, as well as below existing levels during the day time, but would exceed EPA night time criteria levels at residences closest to the terminal by up to 5 dBA, during certain weather conditions. It is predicted that the EPA sleep disturbance criteria would be exceeded by up to 8 dBA at residences closest to the terminal, for maximum noise from container handling. However, the frequency of actual disturbance would depend on container handling practices at the terminal.

Noise barriers would be erected along the northern and eastern boundaries of the new terminal to reduce noise impacts.

A Noise Management Plan containing environmental management measures to assess and minimise noise would be prepared for the operation of the new terminal and would incorporate the following, where possible and practical:

- fitting equipment at the new terminal with noise control kits;
- selecting the quietest possible plant within other operational constraints;
- replacing audible safety alarms on terminal equipment with visual alarms during night hours;
- operator awareness and training to minimise poor container handling practices; and
- complaints handling and noise monitoring.

Truck Traffic Noise

The increase in truck movements due to the proposed expansion would not cause an increase in overall noise levels of more than 0.6 dBA. This change would be unnoticeable to the human ear. With the new terminal in operation and the port operating at capacity, the contribution of all port truck traffic to overall traffic noise levels would be up to 2dBA during some night time hours. This would be barely noticeable to the human ear.

Existing traffic noise in the area already exceeds noise criteria at some locations. This noise is contributed to by cars, light vehicles and heavy vehicles including port related trucks.

Rail Traffic Noise

The existing and future use of the Botany Freight Rail Line, independent of the new terminal, could have an adverse social impact on nearby residences where noise mitigation measures are not employed.

However, the higher number of train movements due to the proposed expansion would not increase maximum noise levels along the goods rail line, but would increase the 'average' noise levels by a maximum of about 2 dBA. An increase of 2dBA is expected to be just noticeable to residents living adjacent to the line as the increase in the number of movements would be detectable.

Further details of potential impacts of noise during operation of the new terminal, and ways in which such impacts can be mitigated are provided in **Chapter 22 Noise**.

26.5.8 Traffic and Transport

Feedback received during community consultation activities indicates that the current level of truck traffic on Botany Road is a concern in terms of impacts on the safety, noise levels, air quality and visual amenity of the area. Local residents expressed concern that the proposed new terminal would result in an increased number of trucks on Botany Road.

Construction

There would be an increase in road traffic travelling to Port Botany during the construction phase of the Port Botany Expansion. Approximately 103 extra trucks would travel to the port each day. The majority of construction traffic would approach the construction site from the south, using Foreshore Road and Penrhyn Road. This is a very small percentage of peak traffic volumes on major arterial roads around the port.

It is not anticipated that rail would be used to transport construction materials.

Further details on the assessment of the impacts of construction traffic (road and rail) and ways in which such impacts can be mitigated are provided in **Chapter 21 Traffic and Transportation**.

Operation

Increases in road and rail traffic due to increased container handling capacity at Port Botany are likely to have some impact on the local Port Botany community and the communities of the City of Botany Bay and the Randwick City LGAs.

Operation of the new terminal would result in approximately 940 direct container truck visits per day by 2025. However, the amount of truck movements from the existing port would also increase by 2025 as a result of increased trade, and the contribution the new terminal would make to overall port generated traffic must be considered in this context.

The increase in truck traffic could have a negative social impact, particularly from trucks using Botany Road. The efficient use of trucks and maximising the number of containers transported to/from the port by rail would minimise the number of trucks visiting the port and hence impacts associated with truck traffic.

Design features to facilitate the efficient movement of trucks at the new terminal and prevent queuing on external roads would assist to reduce the local impact of increased truck traffic.

Operation of the new terminal would create approximately 38 train movements per day by 2025, based on rail transporting 40% of container throughput from the new terminal. However, the amount of train movements from the existing port would also increase by 2025 as a result of increased trade.

Further details of traffic and transportation impacts and mitigation measures are discussed in **Chapter 21 Traffic and Transportation**. Noise impacts associated with road and rail transport as discussed above and also in **Chapter 22 Noise**.

26.5.9 Light

Light emanating from the port is an existing issue for local residents, and the community expressed concern that light levels would increase as a result of the Port Botany Expansion.

Operation

With a number of mitigative measures in place, there would be no direct light spill onto any residential properties in the local Port Botany area. There is the potential for some local residents to be able to view light sources due to the height of some port and ship structures on which lights are mounted.

Residents around the foreshores of Botany Bay would notice an increased luminance emanating from Port Botany once the new terminal is in operation. However, due to the distance of these residences from the port and the fact that the increase would not be large, this is not considered to be an adverse social impact.

The impact of increased luminance emanating from the new terminal would be minimised by adopting a series of mitigation measures related to the design and placement of light sources. In addition, all lighting on the new terminal would comply with the guidelines of the Civil Aviation Safety Authority.

Further details on the assessment of lighting impacts are presented in **Chapter 30 Operational Aviation Issues** and **Appendix Z**.

26.5.10 Hazard and Risk

During community consultation, concerns were expressed about the potential for Port Botany to be the site of an accident due to the storage of large quantities of dangerous goods. The proximity of dangerous goods cargo to residential areas was also of concern to the community.

Operation

The Preliminary Hazard Analysis undertaken as part of this EIS (**Appendix W** and summarised in **Chapter 28 Preliminary Hazard Analysis**) assessed the risks arising from the handling, transport and storage of dangerous goods at the new terminal, including incidents at neighbouring facilities. The assessment concluded that the individual, societal, biophysical environment and transportation risks posed by the proposed development would be acceptable and would satisfy PlanningNSW risk criteria and the recommendations of the *Port Botany Land Use Safety Study* (DUAP 1996).

The future operator(s) of the new terminal would prepare an Emergency Response and Incident Management Plan to deal with any potential emergencies. It would be developed in conjunction with the NSW Fire Brigade, State Emergency Services and Police. It would also be prepared in accordance with the existing Port Botany Emergency Plan (Sydney Ports Corporation 1996) and the Botany Bay Local Disaster Plan (Botany Bay Local Emergency Management Committee 2000).

26.5.11 Property Values

Local residents raised concerns that further industrial development in the area would have a negative impact on the value of their property.

Operation

Property values have been increasing in the Botany Bay community over the last 30 years. During this time, there have been major developments of the port, airport and surrounding industrial developments.

Demand for residential property in the Botany area has been strong, as seen in the growth in median unit prices for Botany LGA. The Real Estate Institute of NSW reported this growth to be 128% from 1993 to 2000. Demand is, and would, continue to be fuelled mainly by the area's proximity to services, improved infrastructure (Airport and Eastern Distributor) and the eastern beaches of Sydney. The paucity of available land is expected to result in the continuing demand for residential property. The Port Botany Expansion would not, therefore, have a negative social impact on property values.

26.5.12 Groundwater Levels

Previous reclamation work in Botany Bay has resulted in rises in local groundwater levels. There is concern amongst the local Port Botany community that further reclamation may have a further adverse impact on their properties.

Operation

Groundwater rise, as a result of the Port Botany Expansion, would be very small (between 0.01 - 0.04 metres). The changes would result from enhancement work proposed for Foreshore Beach, not the reclamation required for the new terminal. The predicted changes are minor in the context of natural groundwater variations of up to five metres.

Results of modelling demonstrate that the proposed reclamation for the new terminal would have no effect on groundwater levels on the landward side of the present shoreline and no effect on volume or flow directions of groundwater.

The changes to groundwater levels as a result of the foreshore works would, therefore, not impact on residents' property. Monitoring of groundwater levels for one year following completion of the Port Botany Expansion would reassure residents that their properties were not being adversely affected.

Further details on the assessment of groundwater impacts are presented in **Chapter 17** *Groundwater*.

26.6 Conclusion

The proposed expansion of Port Botany would have a range of social impacts, both beneficial and adverse. At a metropolitan level, the proposal would result in an increase in economic growth and employment opportunities. However, at a local level the social impacts are more complex and potentially adverse. At the local level, the proposal would have social impacts on users of the public open space of Foreshore Beach and Penrhyn Estuary, and on the residents of the local Port Botany community.

The social profile indicates that the proposed Port Botany Expansion would not result in significant social disadvantage to people in the Randwick and Botany LGAs due to their particular socio-demographic status. The proposed expansion would also not have a discernible impact on the social profiles of these local government areas.

Community feedback indicated that users of Foreshore Beach and Penrhyn Estuary, residents of the Port Botany area, and residents of the City of Botany Bay, Randwick City, and the wider Botany Bay catchment area are concerned about aspects of the proposed expansion. Particular concerns are potential loss of public open space and recreational facilities, the impact of increased traffic on the local area, increased noise, and the cumulative environmental impact of industrial facilities in the Botany Bay area.

The proposal would result in a change to the form of the open space areas of Foreshore Beach and Penrhyn Estuary, and the replacement of the Penrhyn Road boat ramp with a new and improved facility on Foreshore Beach.

During construction of the proposed expansion, most of the social impacts would be on the local Port Botany community and the community of people using the recreational facilities near the port. Social impacts during this phase would include a partial restriction on recreational use of Foreshore Beach and areas of Botany Bay, increased traffic on local roads, and increased noise levels.

During operation of the new terminal, most of the social impacts would also be on the community of people using the recreational facilities near the port and the local Port Botany residential community. The social impacts would include changes to public open space and recreational facilities, noise impacts, and traffic impacts. The proposal would alter Foreshore Beach and Penrhyn Estuary, with improvements being made to the public open space and recreational facilities and opportunities for all existing recreational uses to continue.

Local and State Government representatives were involved in developing ideas for the Foreshore Beach and Penrhyn Estuary areas to provide an optimum outcome for the local community. The resultant concept is for an enhanced Foreshore Beach with opportunities for all existing recreational uses to continue, and for a Penrhyn Estuary largely conserved for wading birds. There would also be improved pedestrian and cycle connections across Foreshore Road and along Foreshore Beach / Penrhyn Estuary, linking in to plans for a future cycle / pedestrian trail.