



## ***MAJOR PROJECT ASSESSMENT: AMCOR Paper Mill, Matraville***



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

July 2007

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## EXECUTIVE SUMMARY

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AMCOR Packaging (Australia) Pty Ltd (AMCOR) proposes to construct and operate a new paper mill at Botany Road Matraville, in the Randwick Local Government Area. The site is situated on Botany Road, with industrial areas to the south and west and residential areas to the east.

The project involves construction and operation of a new paper machine to replace the two existing paper machines on site (No. 7 and 8). The new machine would be housed in a new building along Botany Road and McCauley Streets and would require demolition of various buildings currently on the site. The project has a total capital investment value of \$150 million and would result in a reduction from 200 employees to 140 during operation.

The Department received 15 submissions on the project during exhibition, with 6 from public authorities, 2 from special interest groups (Nature Conservation Council and Sydney Ports Corporation) and 7 from neighbouring landowners. The Department of Environment and Climate Change, the Department of Water and Energy, Sydney Water and Randwick Council did not object to the project, but raised issues such as odour impacts, noise, water and wastewater management and heritage, and provided recommended conditions of approval to address these issues.

The Department has assessed the merits of the project, and is satisfied that the new paper mill would result in an improvement over the existing operations. The new mill would have reduced odour impacts, improved management of water supply extraction, improved stormwater and wastewater management systems and significantly reduced operational noise. The Department is satisfied that proposed mitigation measures and recommended conditions of approval would address the concerns raised in submissions, and ensure an acceptable level of environmental performance.

The Department is satisfied with AMCOR's consideration of alternatives to the project, and believes that the project has been adequately justified on economic, social and environmental grounds.

Consequently, the Department believes the project is in the public interest, and should be approved subject to conditions.



# 1. BACKGROUND

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## 1.1 Project Setting

AMCOR operates a paper mill at Botany Road, Matraville in the Randwick LGA. The site is 15.5 hectares in area and is located within the Matraville industrial area. The site is bounded to the south by Botany Road, to the north by Australia Avenue, to the west by McCauley Street and extends east to the end of Partanna Avenue (refer to Figure 1).

The site is surrounded by a mix of industrial, commercial and residential land uses. The closest residences are located approximately 30 metres from the mill boundary off Partanna and Australia Avenues. Commercial offices are located to the north-west of the site on McCauley Street. Industry associated with Port Botany is located to the south and south-west of the site.



Figure 1: Site location

## 1.2 Existing Paper Making at Botany Mill

AMCOR has operated a paper mill at Botany Road, Matraville since 1901. The nature of development on the site has changed considerably over the past 100 years, from construction of paper machine no. 1 in 1901 to the current operations, comprising two paper machines no. 7 and 8 with a capacity to produce 275,000 tonnes of paper per year.

Expansion of paper making on the site has involved decommissioning of old machines which have generally been retained on the site. This has resulted in various disused equipment and buildings, some in a state of disrepair.

The site currently comprises two large buildings on the eastern boundary containing paper machines no. 7 and 8, see Figure 2. Adjacent to these buildings are reel stores and loading bays for cutting and transfer of finished product. The site also contains a large waste paper storage area in the centre of the site, numerous tanks for fibre and water storage, a wastewater treatment plant, a substation and boiler house, chemical and engineering stores and an administration office and car parking.

The northern part of the site and the buildings along the McCauley Street frontage are disused and in a state of disrepair. These buildings housed previous paper machines, waste paper storage and product stores. Some of the buildings have recently undergone asbestos removal works which has resulted in removal of the roof sheeting and some parts of the walls. The current configuration of the site means that large areas are not utilised, and AMCOR has considered future divestment of redundant parts of the site, following construction of the new paper mill.

The process of paper making involves input of waste paper, cardboard boxes, newsprint, magazines, etc, that are transported to the site via trucks. The waste paper is temporarily stored before transfer via front end loader to hydropulpers. Water is added to the waste paper to separate the individual fibres and remove contaminants such as plastics, rubber, metal, etc. The slurry fibre mix is then stored in separate silos according to the length of fibres, before being pumped to the paper machine.

The paper machine removes excess water through rollers and steam heated cast iron cylinders. Starch is added and the final product is produced as a jumbo roll which is then cut to customer order sizes and transported off site via trucks.

Paper production has continued in much the same way for the past 40 years, however, demand for paper products has changed significantly over this period, with the demand for more lightweight products increasing. AMCOR therefore proposes construction of a new paper machine and decommissioning of the existing machines to meet changing demands in the type and quantity of paper products. Installation of a new machine also provides significant process improvements and efficiency as water and energy use per unit of paper production is reduced, and labour inputs are reduced.

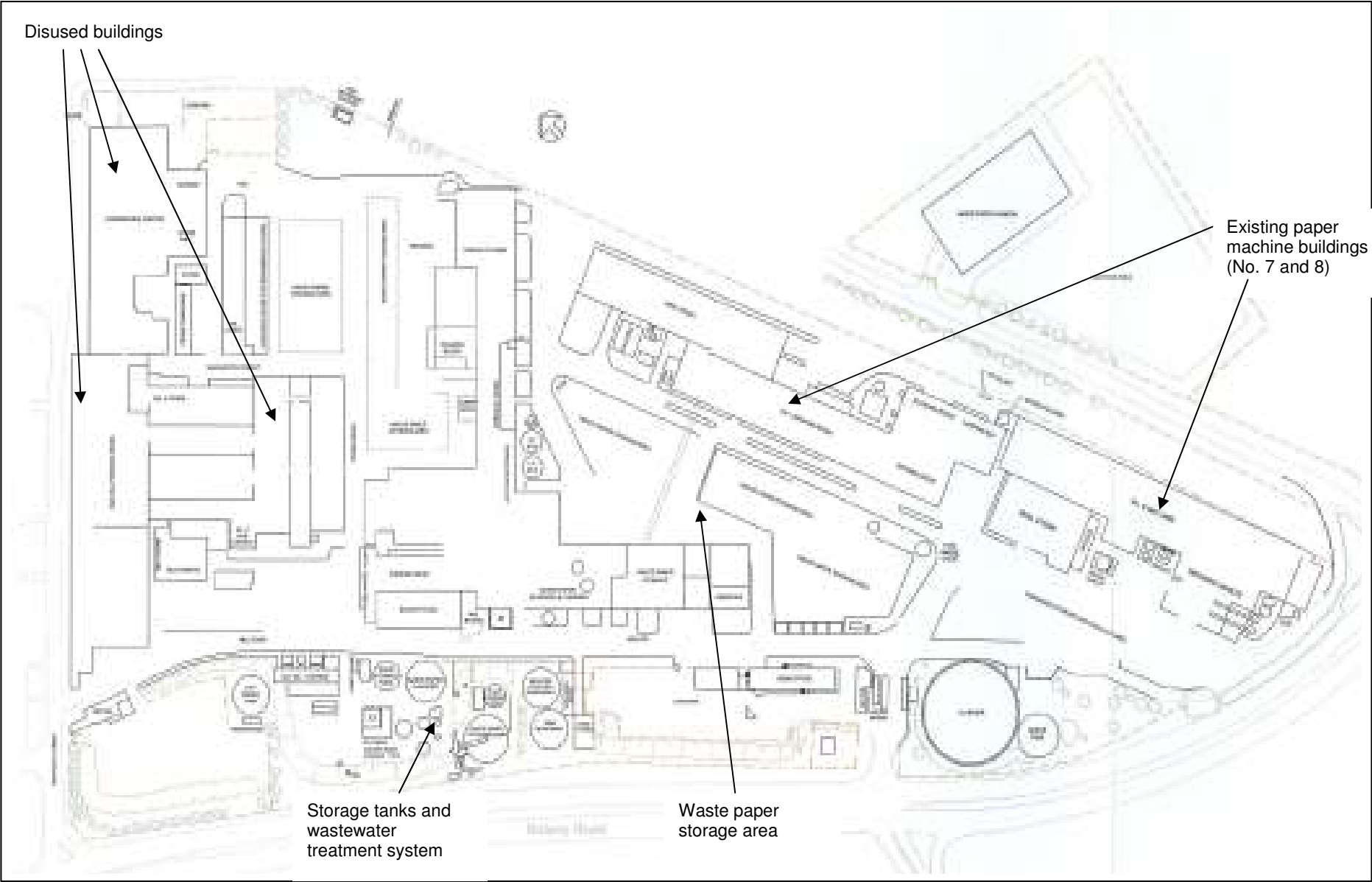


Figure 2: Existing Site Layout

## 2. PROPOSED DEVELOPMENT

### 2.1 Project Description

The project involves the construction and operation of a new paper machine to replace the two existing paper machines on site (No. 7 and 8). The major components of the project are summarised in Table 1 and illustrated in Figure 3. The Environmental Assessment (EA) for the project was lodged with the Department in December 2006 (see Appendix D).

Table 1: Major Components of the Proposed Facility

Component	Description
Demolition and Relocation of Services	Undertaken in three stages, with the majority of demolition of derelict buildings and infrastructure undertaken at the commencement of works (see Figure 4). Demolition includes: <ul style="list-style-type: none"> <li>the old finishing mill building;</li> <li>engineering store;</li> <li>turbine room and boiler house; and</li> <li>storage tanks.</li> </ul> Service relocation works would run in parallel with demolition and would include relocation of the electricity substation 120 metres north east of its current location, and relocation of storage tanks.
Construction	Includes: <ul style="list-style-type: none"> <li>site preparation works, excavation for building footings and concrete pours;</li> <li>new paper machine building, 25 metres high;</li> <li>new finished product store, 12.5 metres high, and covered docks for loading;</li> <li>new engineering store and workshop, 12.5 metres high;</li> <li>expand existing waste paper storage area;</li> <li>3 new fibre and water storage silos (2-3 storeys high);</li> <li>new bunded chemical storage area;</li> <li>new above ground diesel storage tanks and removal of the existing underground storage tank;</li> <li>redesign internal roads and construct a new weighbridge;</li> <li>redesign of stormwater and process water systems; and</li> <li>landscaping including screening trees along McCauley Street and Botany Road.</li> </ul>
Commissioning	Testing of the new paper machine.
Transition	Decommissioning machine No. 7 and reducing production from machine No. 8 as production from the new paper machine increases.
Operation	The new paper machine would operate and the No. 8 machine would be decommissioned. Both decommissioned machines would be retained on site.
Production	Increase from 250,000 tonnes per annum to a maximum of 383,763 tonnes per annum.
Capital Value	\$150 million.
Jobs	Reduce from 200 employees to 140 during operation.
Length of Construction	Approximately 24 months with a further 6 months for commissioning/transition phases and final demolition and minor construction. This would enable continuous paper production.

### 2.2 Need for the Project

Construction of a new paper mill and decommissioning of the existing paper machines is proposed by AMCOR in order to meet growth in demand for paper products and changes in the type and quality of products required by the market. The demand for strong, light weight packaging papers is increasing and the existing mill is unable to produce this type and quality of packaging materials.

In addition to market requirements, construction of the new paper mill would enable an improvement in the overall efficiency of the plant with reduced energy and water use per unit of paper produced.

Construction of the new paper mill would assist to reduce the amount of waste paper sent to landfill and ensure that increases in the generation and collection of waste paper can continue to be re-processed within NSW.

In order to produce paper products required by current and future markets, AMCOR considered various alternatives. These included:



- no development;
- alternative locations for a new paper mill, including 8 sites in NSW;
- alternative processes and technology, including single versus multiple paper machines; and
- alternative plant layouts on the Botany site.

The no development option would result in eventual closure of the Botany paper mill within 10 years due to the age, inefficiency and limitations of its technology. The assessment of 8 sites (including the Botany site) discounted those located outside of Sydney due to the distance from the raw material waste paper market, and the market for finished product, both of which are in Sydney. The alternative sites in Sydney, including Liverpool, Penrith and St. Marys posed various land use constraints, including proximity to residents and heavy vehicle access issues. The Botany site was considered to present numerous advantages over alternative locations, including proximity to raw material and finished product markets, good heavy vehicle access and manageable environmental constraints.

The assessment concluded that a new, single paper machine on the Botany site provided the capacity to respond to changing market demands, an economically viable project and provided environmental and social benefits by locating the machine further away from residential areas and reducing impacts associated with odour and noise. The machine would also improve production efficiency, through reduced labour costs and reduced water and energy consumption per unit area of paper produced.



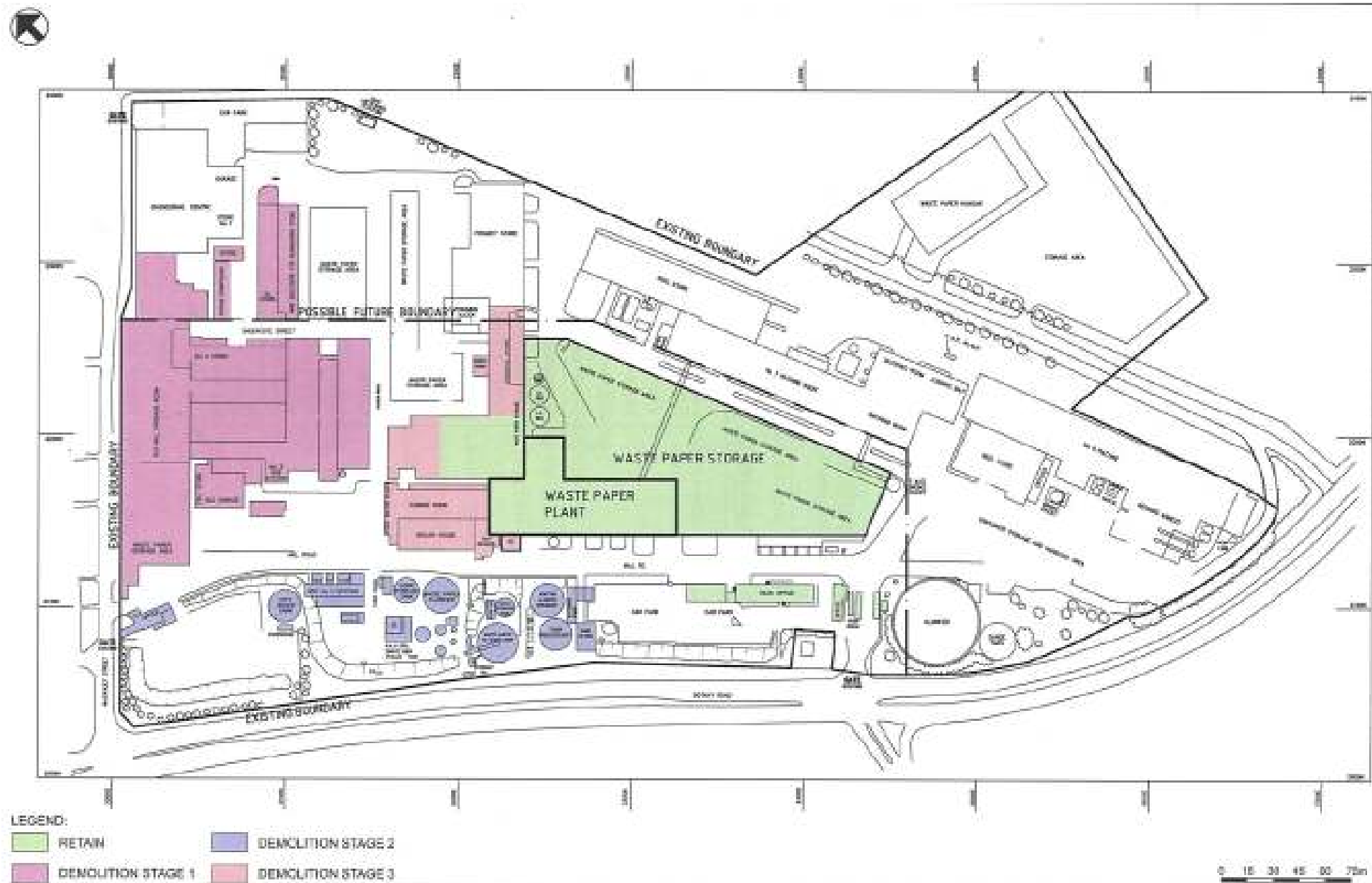


Figure 4: Proposed Demolition at the Facility

### 3. STATUTORY CONTEXT

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#### 3.1 Major Project

The project is classified as a major project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) because it is development for the purpose of paper, pulp, cardboard or newsprint with a capital investment of more than \$30 million and therefore triggers the criteria in Schedule 1, Clause 4 of *State Environmental Planning Policy (Major Projects) 2005*.

Consequently, the Minister is the approval authority for the project.

#### 3.2 Permissibility

Under Section 75J(3) of the EP&A Act, the Minister cannot approve the carrying out of a project that would be wholly prohibited under an environmental planning instrument.

The site is zoned 4(a) Industrial under *Randwick Local Environmental Plan 1998*. Development for the purpose of an 'industry' is permissible with development consent in this zone.

Consequently, the Minister may approve the project.

#### 3.3 Public Exhibition

The EA for the project was exhibited from 19 December 2006 until 2 February 2007 which satisfies the requirements for public consultation in Section 75H of the EP&A Act.

#### 3.4 Environmental Planning Instruments

Under Section 75I(2) of the EP&A Act, the Director-General's report on this project is required to include a copy of or reference to the provisions of any *State Environmental Planning Policy* (SEPP) that substantially governs the carrying out of the project.

The Department has assessed the project against the relevant provisions of several SEPPs (including SEPPs 11, 33, 55 and 64), (see Appendix E), and is satisfied that none of the SEPPs substantially govern the carrying out of this project.

- *State Environmental Planning Policy No 11 – Traffic Generating Developments;*
- *State Environmental Planning Policy No 33 – Hazardous and Offensive Development;*
- *State Environmental Planning Policy No 55 – Remediation of Contaminated Land; and*
- *State Environmental Planning Policy No 64 – Advertising and Signage.*

This assessment concludes that the project is generally consistent with the aims, objectives and requirements of these instruments.

#### 3.5 Objects of the Environmental Planning and Assessment Act, 1979

The Minister is required to consider the objects of the EP&A Act when he makes decisions under the Act. These objects are detailed in Section 5 of the Act, and include:

*'The objects of this Act are:*

*(a) to encourage:*

- (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- (ii) the promotion and co-ordination of the orderly and economic use and development of land,*
- (iii) the protection, provision and co-ordination of communication and utility services,*
- (iv) the provision of land for public purposes,*
- (v) the provision and co-ordination of community services and facilities, and*
- (vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*

- (vii) *ecologically sustainable development, and*
- (viii) *the provision and maintenance of affordable housing, and*
- (b) *to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and*
- (c) *to provide increased opportunity for public involvement and participation in environmental planning and assessment.'*

The objects of most relevance to the Minister's decision on whether or not to approve this project are those under Section 5(a)(i), (ii) and (vii).

With respect to ecologically sustainable development (ESD), the EP&A Act adopts the definition in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD 'requires the effective integration of economic and environmental considerations in decision-making processes' and that ESD 'can be achieved through' the implementation of the principles and programs including the precautionary principle, the principle of inter-generational equity, the principle of conservation of biological diversity and ecological integrity, and the principle of improved valuation, pricing and incentive mechanisms. In applying the precautionary principle, public decisions should be guided by careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment and an assessment of the risk-weighted consequences of various options.

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the project application.

This assessment integrates all significant economic, social and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences.

AMCOR has also considered a number of alternatives to the proposed project (including the alternative of not proceeding), undertaken an environmental risk analysis of the project, and considered the project in the light of the principles of ESD.

### **3.6 Statement of Compliance**

Under Section 75I of the EP&A Act, the Director-General's report is required to include a statement relating to compliance with the environmental assessment requirements for the project.

The Department is satisfied that the environmental assessment requirements have been complied with.

## **4. ISSUES RAISED IN SUBMISSIONS**

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During the exhibition period, the Department received 15 submissions on the project (see Appendix C), including:

- 6 submissions from public authorities (the Department of Environment and Climate Change, the Department of Water and Energy, Sydney Water, the Roads and Traffic Authority, Railcorp and Randwick City Council);
- 2 submissions from special interest groups (Nature Conservation Council and Sydney Ports Corporation); and
- 7 submissions from the general public.

### Public Authorities

The Department of Environment and Climate Change (DECC) initially raised concerns about the identified noise criteria, predicted noise levels and odour impacts from the facility. Following a review of AMCOR's Response to Submissions report which included a revised noise assessment, the DECC advised they were satisfied that the issues they raised had been addressed and recommended that the project be approved subject to conditions.

The Department of Water and Energy (DWE) supported the project, but noted that impacts on the groundwater table would need to be addressed by AMCOR as part of the approval process for a replacement bore at Snape Park.

Sydney Water are currently negotiating with AMCOR about the quantity, quality and timing of discharges of wastewater into the Southern and Western Suburbs Ocean Outfall Sewer (SWSOOS). Sydney Water recommended conditions of approval, and are continuing negotiations regarding design of the stormwater and wastewater systems.

The Roads and Traffic Authority (RTA) recommended conditions of approval for construction traffic management, whilst Railcorp raised no objections to the project.

Randwick City Council (Council) raised a number of concerns relating to the future use of redundant parts of the site, reliance on potable water, wastewater discharges, stormwater and flood management, and car parking and traffic impacts. Council requested that the heritage façade of the old mill building be retained. Notwithstanding these concerns, Council recommended conditions of the approval for the project.

#### Special Interest Groups

The Natural Conservation Council (NCC) raised concerns about increased water usage and failure to incorporate rainwater harvesting into the project, impacts on the aquifer and the ongoing discharge of wastewater into Botany Bay. The NCC requested that the use of renewable energy and transportation of materials by rail and ship be investigated and that air quality be monitored.

The Sydney Ports Corporation (SPC) requested that they be consulted in relation to management of construction and operational traffic so that impacts on SPC operations would be minimised. SPC also requested that discharge of wastewater into Bunnerong Canal continue to meet standards currently outlined in an agreement between SPC and AMCOR.

#### General Public

The key issues raised by neighbouring landowners are summarised below. The most common concern across all submissions related to odour. A summary of the issues is provided below.

- adverse air quality impacts, particularly odour associated with the existing and proposed facility;
- noise impacts of the project;
- inappropriate land use adjoining a residential area;
- impacts from steam and water on footpath along Bumborah Point and Botany Roads; and
- future use of redundant land on the site.

The Department has assessed the issues raised in the submissions in Section 5 of this report. AMCOR provided a response to submissions which is included as Appendix B.

## **5. ASSESSMENT**

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The Department has assessed the project, in accordance with the requirements of Clause 8B of the *Environmental Planning and Assessment Regulation 2000*, and considers the key issues to be odour, water management, noise, heritage and visual impacts. Consideration of these and other issues is presented below.

### **5.1 Odour**

#### Emissions from paper mill operations

The primary emission of concern from operation of the paper mill is odour which is caused by the release of volatile fatty acids from biological organisms within the paper making process and associated wastewater streams. Odorous emissions occur when the process water evaporates. No other pollutants of concern for air quality are emitted from paper milling operations.

The paper mill has a history of receiving odour complaints from neighbouring residents and in 2001 implemented a number of odour reduction measures as part of its Pollution Reduction Program (PRP). The PRP has resulted in a reduction in odour concentrations from approximately 25 odour units/m<sup>3</sup> (OU/m<sup>3</sup>) at the nearest residents to around 6 OU/m<sup>3</sup>, and a reduced level of complaints. However the submissions received during exhibition of the EA indicated that local residents remain concerned about odour emissions from the paper mill.

### Sensitive Receivers

The nearest sensitive receivers to the site are the residential properties located 30 metres from the site boundary on the north and eastern sides and include Australia, Murrabin and Partanna Avenues. Air quality in the local area is influenced by various other emission sources including road traffic, aircraft, other industrial emissions and the Southern and Western Sydney Ocean Outfall Sewer (SWSOOS).

### Odour Criteria

Odour performance criteria for the site would be 2 OU/m<sup>3</sup> based on the DECC's *Assessment and Management of Odour from Stationary Sources in NSW 2001*. This is the most stringent criteria, applicable to residential areas, and is currently not achieved by the existing paper mill.

### New Paper Mill

An odour assessment was conducted as part of the EA for the new paper mill. The assessment considered existing odour emissions from the paper mill and potential emissions from the new mill. The results are summarised in Table 2 below:

Table 2: Odour Emissions Assessment

Operations	Operating conditions	Position on site	Emissions at nearest residence
Existing Paper Mill	2 machines in operation	Eastern boundary	6 OU/m <sup>3</sup>
New Paper Mill	1 machine in operation	Western boundary	5 OU/m <sup>3</sup>

The assessment of emissions from the new paper mill was limited by the lack of available data for the new paper machine technology; therefore, modelling was undertaken using data from the existing paper machines and transposed onto the location of the new paper mill. Hence, the modelling results are considered to be extremely conservative.

The new paper machine is expected to produce lower total odour emissions than those predicted by modelling. Emissions from the existing mill to the new mill are estimated decrease by 6%. The reduced emissions are due to:

- an improved process water system. The new system would be inherently more stable, would experience considerably less failures than the existing system, which are often the cause of offensive odours and would eliminate stagnant areas, reducing the potential for build-up of micro-organisms which can lead to odours;
- improved technological performance. The new paper machine would be designed specifically to minimise odour impacts;
- a single machine operating, instead of two machines. The two machines currently operating are over 40 years old; and
- located further away from residents. The existing machines are located immediately adjacent the eastern boundary near to residents in Partanna Avenue. The new machine would be located approximately 200 metres further away from residents in the western part of the site.

Given the predicted lower emissions, AMCOR is confident that the new paper mill would achieve odour emissions of 2 OU/m<sup>3</sup> at the nearest residents. In addition, AMCOR has also identified in the EA, a number of specific odour reduction measures that could be implemented in the event of offensive odours occurring off site. These are focussed on reducing odour generating biological activity and include:

- correction of any mechanical deficiencies resulting in stagnant pockets in the process circuits;
- adjustment of the biological control program to specifically target identified problem areas;
- optimisation of the paper machine wet end retention system to minimise total dissolved solids (TDS) and biological oxygen demand (BOD) levels in the paper machine water loop;
- controlling and operating the process water loops at the lowest practical TDS level to minimise the availability of food sources for microbiological organisms; and
- investigating reasonable and feasible upgrades of infrastructure on site to improve environmental performance.

Given that the new paper mill is likely to produce lower odour emissions than those modelled, the DECC and the Department are satisfied that operation of the new paper mill would significantly reduce the odour impacts of existing operations. The DECC and the Department require the new paper mill to comply with the criteria of 2 OU/m<sup>3</sup> and with Section 129 of the *Protection of the Environment*

*Operations Act 1997* in relation to causing no offensive odour (which would be achieved by emissions at 2 OU/m<sup>3</sup>).

The recommended conditions of approval also require AMCOR to prepare an odour audit, as part of an independent environmental audit within one year of operations commencing and every 3 years thereafter. The audit would validate the predictions made in the EA, assess compliance with the odour criteria and provide an opportunity for implementing odour reduction measures should odour impacts be occurring. The Department is satisfied that the assessment has demonstrated an improvement in odour emissions from operation of the new paper mill, and is satisfied that the conditions would manage odour to acceptable levels.

#### *Construction and Transition Phases*

The transition phase of the project involves decommissioning the existing machines and increasing production from the new paper machine. In order to minimise odour emissions during this phase, the Department has included in the conditions of approval a limit on production during this phase. Paper production is to remain at the level of the existing operations, at 275,000 tonnes of paper per annum.

## **5.2 Water and Wastewater**

### *Water Supply*

The key inputs for paper making at the mill include waste paper and water. Water is supplied to the site primarily through extraction of groundwater from a licensed borefield in Snape Park, several kilometres north of the site (see Figure 5). Groundwater is extracted at this borefield from the Botany Sands Aquifer and is then discharged into a stormwater canal which flows into Long Dam. Long Dam also collects stormwater from the surrounding area and from approximately 25% of the AMCOR site. Water is then extracted from Long Dam to supply the paper mill.

Water supply for papermaking at the existing mill is provided by the following sources:

- Groundwater extraction (from Snape Park borefield): 7 megalitres/day (ML/day); and
- Potable water from mains supply: 1.4 ML/day.

In addition to the standard forms of water supply to the mill, the nearby ORICA site is currently discharging excess treated water from its groundwater treatment plant into Long Dam, in the order of 3 ML/day. This water is currently meeting the majority of the paper mill's requirements, and water is only being extracted from the Snape Park borefield intermittently. It is unknown how long the ORICA water will be available to AMCOR, hence the environmental assessment has focussed on the key sources of groundwater from the Snape Park borefield and potable water as supplying the mill into the future.

Despite the levels of supply described above, water use at the mill varies, and current use is in the order of 5 ML/day, up to a maximum of 7 ML/day. Any additional water extracted from groundwater is stored in Long Dam until such time as it is required by the mill.

The primary issues of concern in relation to operation of the new paper machine include:

- Increased volume of water used; and
- Potential impacts on the Botany Sands Aquifer due to continued extraction.

### Increased volume of water used

With operation of the new paper machine, water use would increase due to the overall increase in production of paper. It is expected that water use would increase from 5 ML/day to 5.7 ML/day. The majority of the increase would be served by extractions from Long Dam (consisting of stormwater and groundwater), increasing from 3.5 ML/day to 5.1 ML/day, with potable water consumption expected to decrease from 1.4 ML/day to 0.6 ML/day.

Despite the increase in volumes of water used, the new paper machine is more efficient, therefore water consumption per unit of paper produced would be lower than the existing machines. The overall water consumption per unit area of paper produced would decrease by approximately 17%.





Figure 5: Water Supply System

#### Potential impacts on the Botany Sands Aquifer

The new paper mill would require greater volumes of water than currently used by the mill, however, groundwater extraction would decrease. AMCOR currently extracts 7 ML/day from the Snape Park borefield, and holds a license for this extraction with DWE that is not restricted by volume. There is currently no control system for extractions, so the rate of 7 ML/day is not able to be varied. However, AMCOR do not routinely utilise the full 7 ML/day that is extracted, and have therefore proposed installation of a remote control system to manage extractions in accordance with demand. The control system would allow for variations in demand and would minimise any unnecessary extraction. Therefore, despite water extraction from Long Dam increasing, groundwater extraction would decrease due to improved control.

The DWE raised concerns about the long term sustainability of continued extraction from the Botany Sands Aquifer and requested further analysis by AMCOR. The EA referred to an assessment carried out in 1992 on the impact of extraction on the aquifer. This assessment considered four scenarios including extraction rates of 5, 10, 15 and 20 ML/day. The study concluded that the aquifer would be able to sustain pumping rates of up to 20 ML/day for 50 years (including drought periods) from the Snape Park and Solvay Interbox borefields, without major impacts on surrounding water levels and users. The current extraction rate of 7 ML/day is considerably lower than this level and the proposed

extraction rate would be as low as 5.1 ML/day with the new mill. Therefore, it is considered unlikely that extraction for the new paper mill would adversely impact the aquifer.

Given that the impact assessment for the aquifer is dated, the DWE requested an updated assessment be undertaken as part of the project approval. The Department has included this requirement in the conditions of approval, incorporating the need to consider alternative options for water supply.

As groundwater extraction would decrease with the new paper mill, the Department is satisfied that continued extraction is unlikely to adversely affect the aquifer, and is satisfied that the conditions of approval would address long term impacts on the aquifer and options for alternative water supply.

#### Excavation encountering contaminated groundwater

The primary issue of concern in relation to construction of the paper mill relates to excavation having the potential to encounter contaminated groundwater.

The AMCOR site is located within a Groundwater Extraction Exclusion Zone as groundwater beneath the site has been identified as contaminated with hexachlorobenzene (HCB) from the ORICA site located to the north. No groundwater is extracted from the AMCOR site, and the contamination would only cause concern if excavation is to occur below the groundwater table during construction.

Some excavation would be required during construction, however it is expected to be minimal as fill material would be imported to the site to raise the floor level of buildings above the 1 in 100 year flood event. However, where excavation is undertaken, there is potential for collection of groundwater in the excavation which may contain elevated levels of nitrogen, phosphorus and HCB. Groundwater collected in excavations would not be discharged from site, but would be tested and either transferred to an infiltration pond or direct injection system. Details for managing potentially contaminated groundwater in excavations would be included in the Construction Environmental Management Plan. The Department is satisfied that the potential for encountering contaminated groundwater is low and that appropriate management measures would be in place prior to commencement of construction.

#### *Stormwater*

Stormwater on the AMCOR site (area of 8 hectares) currently drains to either Long Dam, Botany Bay, the Bunnerong Canal, or is collected in the on-site process water system. The central portion of the site (3 hectares) that houses the existing paper machines, waste paper storage areas, roads and container packing and storage areas drain to the process water system as this stormwater may contain contaminants, and in turn discharges to sewer. There are currently no on-site stormwater detention facilities, therefore during significant rainfall events, larger volumes of water drain to the process water system and subsequently to the sewer.

Sydney Water raised concerns about the volume of discharges to the sewer and their likelihood of contributing to or causing overflows from the Southern and Western Sydney Ocean Outfall Sewer (SWSOOS), particularly during wet weather events. AMCOR has subsequently committed to designing the stormwater system for the project to ensure that no stormwater is discharged to sewer. Stormwater would be diverted to Long Dam or Bunnerong Canal. Stormwater from the waste paper storage area may contain contaminants; therefore, AMCOR is currently negotiating with Sydney Water to store contaminated 'first flush' stormwater from this area and then discharge it once dry weather conditions are re-established in the sewer. Discharges would be managed to remain below the maximum daily discharge rate. The design of the stormwater system would be completed in consultation with Sydney Water, as per the recommended conditions of approval.

The Department is satisfied that the project provides significant improvement in the management of stormwater and would minimise impacts on the SWSOOS during wet weather events.

#### *Wastewater*

The existing paper mill reuses water throughout the paper making process several times prior to discharging. Water is treated in a dissolved air flotation (DAF) water treatment plant for reuse until such time as the level of total dissolved solids builds up to a point unsuitable for reuse when it is then discharged to sewer. AMCOR currently discharge wastewater to the sewer at a rate of 280 litres/second (l/s) in accordance with a Trade Waste Agreement. Discharges are currently highly variable, particularly during wet weather events as stormwater is also captured and discharged via the wastewater system. The system has no storage capacity, hence the influence of wet weather events

on discharge rates. Similarly, process or maintenance related activities can also cause short term increases in discharges.

AMCOR are also required to ensure the quality of discharges to the sewer meet the requirements of the Trade Waste Agreement, specifically in relation to biological oxygen demand, suspended solids, grease, sulphates and heavy metals.

Sydney Water currently requires that discharges to the SWSOOS are discontinued during periods of high flow in the SWSOOS, requiring discharges to be diverted to the Bunnerong Canal which eventually flows into Botany Bay. This generally occurs only 3% of the time, and usually coincides with high rainfall events when discharges are diluted by stormwater.

As part of the new paper mill, a flow balancing system (buffer tanks) would be installed in the wastewater treatment system. This would enable variations in discharges to be reduced, as the system would be able to store high flows from wet weather events or maintenance activities and discharge them after the event at a more even flow rate.

In relation to the new paper mill, Sydney Water raised concerns about the volume of wastewater discharges to the SWSOOS, particularly during wet weather events. AMCOR has undertaken modelling of the sewer network at the request of Sydney Water to determine the level of discharge at which overflows of the SWSOOS would not occur. AMCOR has modelled two scenarios and has determined that a discharge rate of 75 l/s for 95% of the time and 150 l/s for 5% of the time (i.e. during maintenance) would not lead to overflows from the SWSOOS. The proposed discharge rates are considerably lower than the existing 280 l/s, given the proposed exclusion of stormwater and the in-built storage capacity within the wastewater treatment system. AMCOR and Sydney Water are yet to agree these details through a revised Trade Waste Agreement, however, the Department is satisfied that the issue has progressed toward a viable solution and one which provides a significant improvement over the existing system for managing wastewater on site.

The Department is satisfied that the impacts associated with water supply, stormwater and wastewater for the new paper mill have been adequately assessed and would generally result in an improved condition over the existing paper mill operations. The recommended conditions of approval require AMCOR to assess the broader impacts on the Botany Sands Aquifer and complete detailed design of the stormwater and wastewater systems in consultation with Sydney Water. Impacts associated with the construction and transition phases are considered to be negligible.

### 5.3 Noise

The nearest residents to the AMCOR site are located to the north and east with the closest dwellings located 30 metres from the boundary of the site in Australia Avenue. Residents in Partanna, Murrabin and Moorina Avenues are also located close to the boundary of the site.

#### *Construction Noise*

The primary noise sources during construction include demolition of existing buildings and services infrastructure, excavation and piling works and construction of the new paper machine building. Noise would also be generated during concrete pouring works as truck movements to the site would increase during this period.

The full construction program covers a period of approximately 24 months, with the noisiest periods of demolition taking 6 months, and excavation, piling and construction of the new building taking a further 6 months.

A construction noise criteria of 50 dB(A)  $LA_{10\ 15\text{minute}}$  was identified in the EA and would apply to the noisiest periods of construction (i.e. demolition, excavation and construction of the new building). Given that construction extends over a long period of time, operational noise criteria would generally apply during all other periods, such as machine construction and commissioning of the new machine, to minimise impacts on residents. Some construction activities, such as piling, would exceed the construction noise criteria, therefore AMCOR would implement a range of measures to minimise noise during the construction period and these have been incorporated into the recommended conditions of approval via the requirement for a Construction Noise Management Plan.

### *Transition Phase*

The worst case noise scenario during the transition phase would involve the operation of one of the existing paper machines and the new paper machine simultaneously. The EA indicates that noise impacts at the nearest residences are unlikely to increase during this period, as paper mill operations would be progressively reduced along the boundaries, closest to the residential locations.

### *Operational Noise*

The primary noise sources during operation include the new paper machine, vent stacks, new and existing external plant and mobile plant. Noise associated with traffic generated by the new paper mill is not a major contributing noise source as traffic generated by AMCOR is minor in comparison to the overall traffic volumes in the area (<2% of vehicles using Botany Road are generated by AMCOR).

The new paper machine would be located in the western corner of the site, further away from residents than the existing No. 7 and No. 8 machines. Also, buildings currently on the site located between residents and the area of the new paper machine building would provide some shielding from noise.

AMCOR modelled predicted noise emissions from the new mill and concluded that some exceedance of the noise criteria may occur during the day of approximately 1dB(A) for some residents in Australia Avenue. This level of exceedance is considered minor and unlikely to cause disturbance, as it is a marginal exceedance of the criteria, and therefore unlikely to be detected; and it is lower than the noise limits for the existing operations as prescribed in AMCOR's Environment Protection Licence. The noise levels would not be exceeded at residents in Murrabin, Partanna and Moorina Avenues, or at the corner of McCauley Street and Australia Avenue.

In order to achieve the relevant noise criteria and ensure only a marginal 1dB(A) exceedance, AMCOR would need to implement a range of management measures, including:

- Use of the Front End Loader during the night time period should be controlled to minimise operational times;
- Finished paper deliveries are to be kept to a minimum during night time hours;
- Vent stacks shall be silenced to a Sound Power Level not exceeding 72 dB(A) in all cases;
- Noisy plant such as blowers should be enclosed in an appropriately designed acoustic room within the paper processing building;
- Outdoor noise sources such as pumps and motors in bunded areas may require additional noise attenuation where low noise motors are not available for the duty. These could be implemented as absorptive noise screens or individual enclosures where necessary;
- Some existing openings in the paper preparation plant that face the residential receivers are to be sealed with a masonry wall as access to these areas from outside would no longer be required.

The DECC has reviewed the noise assessment and considers that it contains an accurate estimate of likely noise impacts from the project. Whilst the project would result in a small exceedance of the noise criteria, the reduced noise levels associated with the project would result in a significant environmental benefit at the surrounding residential receivers over existing conditions. The DECC has therefore recommended that the noise predictions be adopted as the noise limits for the new paper mill.

The Department agrees that AMCOR have adequately demonstrated that the noise impacts would be acceptable and would result in a reduction in noise at the surrounding residential receivers. The recommended conditions of approval therefore require that the project meet operational noise criteria, based on the noise predictions. AMCOR would be required to undertake noise monitoring to verify compliance with noise limits and to address any complaints from residents.

## **5.4 Heritage**

The old finishing mill building located along the McCauley Street frontage of the site is a local heritage item under the Randwick Local Environment Plan. Assessment of the façade of the Old Finishing Mill building indicates it is of aesthetic and social significance due its association with paper making on the site (see Figure 6, note Canary Island date palms have since been removed). No other buildings or features on the site have been identified as heritage items under local, state or national registers.



*Figure 6: Heritage listed McCauley Street facade*

A heritage assessment undertaken in 1997 indicated that the building was from the earliest phase of the mill and retained some significance. The significance of the building has been reduced however due to the removal of specialised papermaking equipment from the building and modifications to its structure. A subsequent heritage assessment and structural reports provided by AMCOR indicate that the building and façade is in poor condition with significant cracking at the parapet level, cracking and spalling of the concrete in the lintels over the windows and corrosion of the steel windows which are fixed in the brickwork.

The project includes demolition of the old finishing mill building and construction of the new paper machine building in its place. AMCOR indicate that there is no alternative location for the paper machine building that would adequately meet safe access and noise reduction requirements.

Council requested that AMCOR consider options for retaining all or part of the McCauley Street façade of the building. Further assessment of the structure concluded that significant work would be required to support the façade following removal of the buildings behind. Works would include temporary bracing along the McCauley Street side of the façade which would extend 4 metres from the building causing disruption to the use of McCauley Street for a period of up to 4 months whilst permanent bracing is constructed behind the façade. Works required to retain the wall would cost approximately \$700,000. In addition to the potential disruption to McCauley Street and the costs, retention of the façade in this location would prohibit the construction of an internal road proposed between McCauley Street and the new paper machine building and the proposed landscaping of Norfolk Pines and Narrow-leafed Paperbarks. The value of retaining the structure in this location is also questionable given that it would be incongruous with the new building to be located behind, at 25 metres high and of modern construction materials.

Further options for retaining part of the façade are currently being considered by AMCOR, in consultation with Council and the Department. Options include, retention of part of the structure and relocating it to a more prominent part of the site and incorporating with landscaping; or relocating the original Paper Machine No. 1 (circa 1901) to a prominent part of the site to represent the paper making history of the site. The Department has included a condition of approval requiring AMCOR to incorporate heritage features into the site that recognise the McCauley Street façade and the history of paper making on the site. An appropriate outcome on the heritage features to be retained is required prior to commencement of demolition of the building.

The Department and Council are satisfied that a commitment has been made by AMCOR to retain the heritage value of the building in an appropriate form on the site.

## 5.5 Visual

The site currently houses the existing paper mill consisting of a variety of industrial buildings, tanks and stacks, consistent with the ad hoc nature of development on the site. The site is separated from residential areas to its north east by a landscaped park area owned by AMCOR and leased to Council. A large number of buildings, including the local heritage item of the old finishing mill, are proposed to be demolished and replaced by a 25 metre high paper machine building along Botany Road. The building would reduce to 12.5 metres in height for the majority of the McCauley Street frontage. The north eastern areas of the site would largely remain unchanged. An artist's impression of the project from Botany Road and from the residential area along Australia Avenue is outlined in Figure 7 and 8.



*Figure 7: Views of the project from Botany Road.*



*Figure 8: Views of the project from the closest residence on Australia Avenue*

The size and design of the building has been developed to effectively house the papermaking machine within an enclosed building. Figure 7 indicates that the project would be large and somewhat obtrusive from Botany Road and the industrial areas towards Port Botany. Figure 8 indicates that views of the project from the closest residential area along Australia Avenue, however, would be limited.

As the primary visual impact of the project would be from the industrial area south of Botany Road, the Department concludes that the visual impact of the project is acceptable and consistent with the industrial use of the surrounding area. The Department notes that the design for the exterior of the building is yet to be finalised and therefore requires AMCOR to provide design plans outlining the final colour and finishes of the building that have been developed in consultation with Council.

## 5.6 Other Issues

Other issues and impacts associated with the project are summarised in Table 4.

Table 4: Other Impacts

Issue	Impact	Recommendation
Construction Traffic	<ul style="list-style-type: none"> <li>Up to 28 additional vehicles accessing the site per hour, over and above vehicles associated with the existing operation.</li> <li>The majority of construction vehicles would access the site at Botany Road, and some would use the access at the south-western end of McCauley Street.</li> </ul>	<ul style="list-style-type: none"> <li>Vehicles would be restricted from using the access at the north-eastern end of McCauley Street, near Australia Avenue to minimise disruption to residents.</li> <li>AMCOR would implement traffic controls at the access at the south-western end of McCauley Street.</li> </ul>
Operation Traffic	<ul style="list-style-type: none"> <li>An increase in daily traffic from 372 vehicles per day to 403 would not adversely impact the road network as represent &lt;2% of existing vehicle movements on Botany Road.</li> <li>Vehicles would continue to access the site at the intersection of Botany Road and Bumborah Point Road.</li> <li>Automated weighbridges are to be installed on site and would minimise truck queuing on Botany Road.</li> <li>A small number of light vehicles would access the site from the access at the north-eastern end of McCauley Street near Australia Avenue.</li> </ul>	<ul style="list-style-type: none"> <li>There would be no increase in operational vehicle movements entering/exiting the site from the access at the north-eastern end of McCauley Street near Australia Avenue.</li> <li>There would be no queuing of AMCOR related vehicles on Botany Road.</li> </ul>
Hazards	<ul style="list-style-type: none"> <li>A Preliminary Hazard Analysis indicates that risks can be adequately managed.</li> <li>There are no significant off-site risks.</li> </ul>	<ul style="list-style-type: none"> <li>The conditions of approval require the preparation of a HAZOP, fire safety study, construction safety study, emergency management plans, and ongoing auditing requirements.</li> </ul>
Contamination	<ul style="list-style-type: none"> <li>New diesel storage tanks would be built above ground and the existing UST removed.</li> </ul>	<ul style="list-style-type: none"> <li>The conditions of approval require the preparation of a Remediation Action Plan by an accredited site auditor for removal of the UST.</li> </ul>
Air quality	<ul style="list-style-type: none"> <li>Demolition of buildings and excavation for new building foundations has the potential to produce dust.</li> </ul>	<ul style="list-style-type: none"> <li>Dust emissions can be adequately mitigated and managed.</li> <li>The conditions of approval require AMCOR to minimise dust generation throughout the life of the project.</li> </ul>
Non indigenous heritage	<ul style="list-style-type: none"> <li>The EA indicated that excavation of sub-surface areas may reveal archaeological deposits</li> </ul>	<ul style="list-style-type: none"> <li>In accordance with AMCOR's Statement of Commitments, a qualified archaeologist would monitor the site during bulk excavation.</li> <li>In the event that aboriginal archaeological items are revealed during construction, work in the immediate vicinity would cease and DECC would be contacted.</li> </ul>
Waste	<ul style="list-style-type: none"> <li>AMCOR propose to reuse most of the excavated fill on-site.</li> <li>Materials generated from demolition would be transported off site for recycling or landfilling.</li> <li>The quantity of solid waste produced on the site would increase by 22%. All solid waste is currently landfilled.</li> </ul>	<ul style="list-style-type: none"> <li>The conditions of approval require AMCOR to prepare a waste management plan covering demolition, construction and operation. The plan includes requirements for minimising waste and finding opportunities for reuse or recycling.</li> </ul>
Flooding	<ul style="list-style-type: none"> <li>Flood study undertaken for eastern part of site. Study for western part of site to be undertaken prior to completion of the final design.</li> </ul>	<ul style="list-style-type: none"> <li>Floor levels of the paper machine building are to be constructed to a minimum of 300mm above the 1 in 100 year flood level.</li> </ul>
Energy	<ul style="list-style-type: none"> <li>Energy use per unit of paper production would be reduced with the new paper mill.</li> </ul>	<ul style="list-style-type: none"> <li>The conditions of approval require ongoing improvement in energy performance through the requirement for an Energy Savings Action Plan.</li> </ul>

## 6. RECOMMENDED CONDITIONS OF APPROVAL

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The Department has prepared recommended conditions of approval for the project (see Appendix A).

These conditions are required to:

- Ensure no offensive odour occurs;
- Manage water supply, stormwater and wastewater;
- Reduce noise impacts on neighbouring residents;
- Remediate areas of contamination;
- Limit disruption caused by traffic;
- Retain heritage features on site and minimise visual impacts.

AMCOR does not object to the imposition of the recommended conditions.

## 7. CONCLUSION

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The Department has assessed the EA, submissions on the project, and AMCOR's response to submissions in accordance with the requirements of the *Environmental Planning and Assessment Regulation 2000*.

The Department is satisfied with AMCOR's consideration of alternatives to the project, and believes that the project has been adequately justified on economic, social and environmental grounds.

This assessment shows the key issues of concern relate to odour, water supply, stormwater, wastewater, noise and heritage.

The Department has assessed these concerns in detail having regard to the objects of the EP&A Act, and the principles of ecologically sustainable development, and is satisfied that the new paper mill would result in an improvement over the existing operations. The new mill would have reduced odour impacts, improved management of water supply extraction, improved stormwater and wastewater management systems and significantly reduced operational noise. In relation to heritage, AMCOR is committed to retaining the heritage significance of the listed finishing mill building in an appropriate form on the site. The details of which would be determined by a qualified consultant in consultation with Council. The Department is satisfied the proposed mitigation measures can effectively reduce the impacts of the project to acceptable levels.

The project would result in capital investment of \$150 million in the locality, however the new paper mill would result in job losses as production efficiency is increased. The project would generate environmental benefits and would result in an improved condition over the existing paper mill operations.

Overall, the Department believes that the project is in the public interest and should be approved subject to conditions.



## 8. RECOMMENDATION

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It is recommended that the Minister:

- consider the findings and recommendations of this report;
- approve the project application, subject to conditions, under section 75J of the *Environmental Planning and Assessment Act 1979*; and
- sign the attached project approval (see Appendix A).

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David Kitto  
**Director**  
**Major Development Assessment**

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Sam Haddad  
**Director-General**

## **APPENDIX A – CONDITIONS OF APPROVAL**

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Refer to the Major Projects Assessment section of the Department's website,  
[www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)

## **APPENDIX B – AMCOR RESPONSE TO SUBMISSIONS**

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Refer to the Major Projects Assessment section of the Department's website,  
[www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)

## **APPENDIX C – SUBMISSIONS**

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## **APPENDIX D – ENVIRONMENTAL ASSESSMENT**

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Refer to the Major Projects Assessment section of the Department's website,  
[www.planning.nsw.gov.au](http://www.planning.nsw.gov.au)

## APPENDIX E – CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

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Section 75(2) of the *Environmental Planning and Assessment Act 1979* requires that reference be made to the provisions of any environmental planning instrument that would (but for Part 3A of the Act) substantially govern the carrying out of the project. The following environmental planning instruments include provisions that would have substantially governed the proposed development:

- *State Environmental Planning Policy No 11 – Traffic Generating Developments*;
- *State Environmental Planning Policy No 33 - Hazardous and Offensive Development*; and
- *State Environmental Planning Policy No 55 – Remediation of Contaminated Land*.

Consideration of the proposed development in the context of the objectives and provisions of these environmental planning instruments is provided below.

### **State Environmental Planning Policy No. 11**

*State Environmental Planning Policy No. 11 – Traffic Generating Developments* applies to the site. SEPP 11 aims to ensure that the RTA is made aware of and allowed to comment on projects for developments listed in Schedules 1 and 2 of SEPP 11. The proposed development is a development listed under Schedule 1 of SEPP 11. SEPP 11 requires the Department to forward a copy of the development application to the RTA within 7 days of receipt. A copy of the development application was provided to the RTA on 20 November 2006. The RTA has provided recommendations which have been considered in the Director-General's Report. Pursuant to clause 7(5) of SEPP 11, the Minister is able to determine the application.

### **State Environmental Planning Policy No. 33**

*State Environmental Planning Policy No. 33 – Hazardous and Offensive Development* applies to the paper mill as a potentially hazardous industry. SEPP 33 aims to identify proposed developments with the potential for significant off-site impacts, in terms of risk and/ or offence (odour, noise etc). A development is defined as potentially hazardous and/ or potentially offensive if, without mitigating measures in place, the development would have a significant risk and/ or offence impact, on off-site receptors. The storage and use of chemicals in the paper making process were assessed via a preliminary hazards analysis. The analysis indicated that the project would comply with the relevant guidelines for hazard and risk and the Department is satisfied with this analysis.

### **State Environmental Planning Policy No. 55**

*State Environmental Planning Policy No. 55 – Remediation of Land* applies to the site. SEPP 55 aims to ensure that potential contamination issues are considered in the determination of a development application. Clause 7 of SEPP 55 states that:

- 7(1) *A consent authority must not consent to the carrying out of any development on land unless:*
- (a) *it has considered whether the land is contaminated, and*
  - (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
  - (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

The Department is satisfied with the consideration of SEPP 55 contained in the Environmental Assessment.

### **State Environmental Planning Policy No. 64**

*State Environmental Planning Policy No. 64 – Advertising and Signage* applies to the site. SEPP 64 aims to improve the amenity of urban and natural settings by ensuring signage, including advertising, is compatible with the visual character of the area, provides effective communication in suitable locations and is of high quality design and finish. AMCOR propose to include signs of the AMCOR logo and name on the façade of the new paper machine building on the Botany Road and McCauley Street frontages. The Department is satisfied with the consideration of SEPP 64 contained in the EA and have included a condition of approval requiring detailed design of signage to be provided to the Department prior to construction of the paper machine building.