MAJOR PROJECT ASSESSMENT: Tooheys Pty Ltd Brewery Upgrade, Lidcombe

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

July 2007

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EXECUTIVE SUMMARY

Tooheys has operated the brewery at Lidcombe since 1978. The brewery currently produces 3.3 million hectolitres of beer each year and is Tooheys primary brewery facility in NSW, supplying approximately 43% of the share of the NSW beer market.

As a result of increasing market competition, Tooheys proposes to upgrade its existing facilities at Lidcombe to improve the economic efficiency of the brewery and subsequently its competitiveness in the NSW market.

The proposed upgrade involves replacement of old equipment in the beer production and utility services facilities.

During the exhibition period, the Department received four submissions on the proposal including three from government authorities and 1 from the Nature Conservation Council. None of the submissions objected to the project, however concerns were raised with regard to stormwater management, construction traffic, contaminated land, flooding, heritage and water and energy consumption.

The Department has assessed these concerns in detail (see Section 5 of this report), and is satisfied that the proposed measures can effectively reduce the impacts of the project to acceptable levels. The Department is also confident that the traffic and noise impacts associated with the construction phase of the project can be mitigated and managed to achieve acceptable levels of environmental performance.

The project would result in capital investment of $70 million in the locality; however the upgraded plant would result in job losses as production efficiency is increased. The project would generate environmental benefits through reduction in energy and water consumption and a reduction in vehicle movements during operation.

Overall, the Department believes that the project is in the public interest and should be approved, subject to conditions of approval to protect the amenity of local residents.

1. BACKGROUND

Tooheys Pty Ltd (Tooheys) owns and operates the Tooheys Brewery at Lidcombe in the Auburn Local Government Area (see Figure 1).

Figure 1- Local Context

The brewery opened in 1978, and is currently the largest brewery in NSW producing up to 3.3 million hectolitres of beer a year and supplying up to 43% of the NSW beer market.

The brewery is located off Nyrang Street in the Lidcombe industrial area, and is surrounded on three sides by industrial/commercial development. Directly across the road from the brewery, there is an extensive residential area (see Figure 1).

There are two accesses to the site: the main entrance off Nyrang Street, and the heavy vehicle access off Percy Street to the west of the brewery. Both roads meet Parramatta Road to the north of the site, and there is direct access to the M4 Motorway from Silverwater Road to the north-west of the site (see Figure 1).

Auburn Council recently approved the construction of a new distribution centre on the site immediately to the west of the brewery (see Figure 1). This centre, which should take 8 months to construct, is likely to be used by Tooheys to store some of the product produced at the brewery, and thereby reducing the number of heavy vehicle movements associated with brewery operations.

2. PROPOSED PROJECT

2.1 Project Description

Tooheys proposes to upgrade the brewery by constructing a new beer processing building, upgrading utilities and constructing a yeast storage area and new Bright Beer Tank Cellar. The main components of the project, including stages of construction are listed in Table 1 and depicted in Figure 2. In addition, the project includes surrender of all existing development consents, with the upgraded brewery to be operated under a single Part 3A approval. The Environmental Assessment (EA) for the project was lodged with the Department in March 2007 (see Appendix D).

Table 1: Main Components of the Project

Aspect	Description
Existing Brewery	Continued use of existing buildings and plant
Stage 1 Upgrade Construction 16 months: September 2007 - end of 2008.	Construction a new **beer processing building**, 13 metres in height, including: • Relocation of filtration plant, installation of two new filter lines and replacement of kieselguhr filters; • Decommissioning and relocation of control room 1, and refurbishment of the area into offices and meeting rooms; • Installation of a small laboratory; and • Modification of the wall on northern façade of the brewhouse to allow integration with the new Beer Processing Building.
	Upgrade of **utility services** within the existing utilities building including: • Decommissioning of existing natural gas boilers and 50m stack (stack to be retained in-situ); • Installation of two x 12.5MW high efficiency natural gas boilers; • Installation of 25m stack to discharge air emissions from the new boilers; • Downscaling existing ammonia refrigeration plant and decommissioning part of the ammonia storage reticulation system; • Removal of 8 existing ammonia condensers and replacement with 2 new condensers; • Installation of new water treatment plant, including a new deaerator and new water cooling tower (existing water storage tower would remain in-situ); and • Installation of new air compressor and new air adsorption drying plant.
	Ancillary works including internal road realignment to allow integration with the Bevchain distribution centre
Stage 2 Upgrade Construction timetable not yet set.	Extension of the first floor of the **yeast storage area** and propagation plant to enable: • Installation of 4 new yeast storage tanks; • Removal of existing yeast propagation plants and replacement with 2 x two-stage propagation plants; and • Removal of existing corridors within the tank farm and installation of new bunds beneath the fermentation and maturation tanks.
	Construction of a new **Bright Beer Tank (BBT) Cellar** including: • Removal of underground fuel storage tank at the site of the new cellar; • Installation of a new BBT cellar as a single storey building and installation of new BBTs to 16 metres high; • Decommissioning of 3 existing BBT cellars over time; and • Reduction of total storage volume by approximately 16%.
Development Consents	Surrender existing development consents issued by Auburn Council Operate the upgraded brewery under a single Part 3A approval.
Production	3.3 million hectolitres of beer per annum (same as existing plant)
Capital Value	$70 million
Jobs	Reduction of 10 full-time brewery technicians and 20 full-time equivalent casual brewery technicians (on an annual basis). Currently employs over 200 staff.

2.2 Project Justification

The main driver for the project is Tooheys' desire to improve the competitiveness and economic efficiency of its brewery operations in NSW.

Tooheys considered several alternatives to the project, see Table 2, but determined that it would be more cost effective and result in a better outcome to upgrade the existing brewery.

Table 2: Alternatives to the Project

Alternatives	**Comments**
Status Quo	Strong competition in Australia through merging of competing breweries and rationalisation of production may result in loss of market share for Tooheys if production efficiencies are not achieved.
Relocation of the Brewery	A new brewery of similar size would require an investment of approximately $400 million. New greenfield sites are unlikely to have the same geographic advantages of Lidcombe in terms of accessibility to major transport corridors and location in the geographic centre of Sydney.
Closure of Lidcombe Brewery and consolidation with other Lion Nathan breweries	Tooheys is the largest brewery of the group and produces the widest variety of products, hence this option was considerable unfeasible. The NSW heritage of Tooheys is also considered important to the customer base.
Consolidating regional production from Perth, Adelaide or Brisbane	Not feasible due to scale of Lidcombe Brewery and the excessive costs and transport related environmental impacts associated with distribution of products to NSW from regional breweries.

The consideration of alternatives concludes that the proposed upgrade of Lidcombe Brewery would improve the overall economic efficiency and environmental performance of the brewery. The analysis concludes that any option (other than the preferred option) would have major dis-benefits including significant increases in capital cost, significant increases in vehicle movements in the Sydney region, and a need to import products from inter-state.

The Department is satisfied that Tooheys has adequately considered alternatives to the project, and that the preferred option can be justified on economic grounds. The Department also notes that the preferred option would result in environmental benefits by improving energy efficiency and reducing water consumption and waste generation.

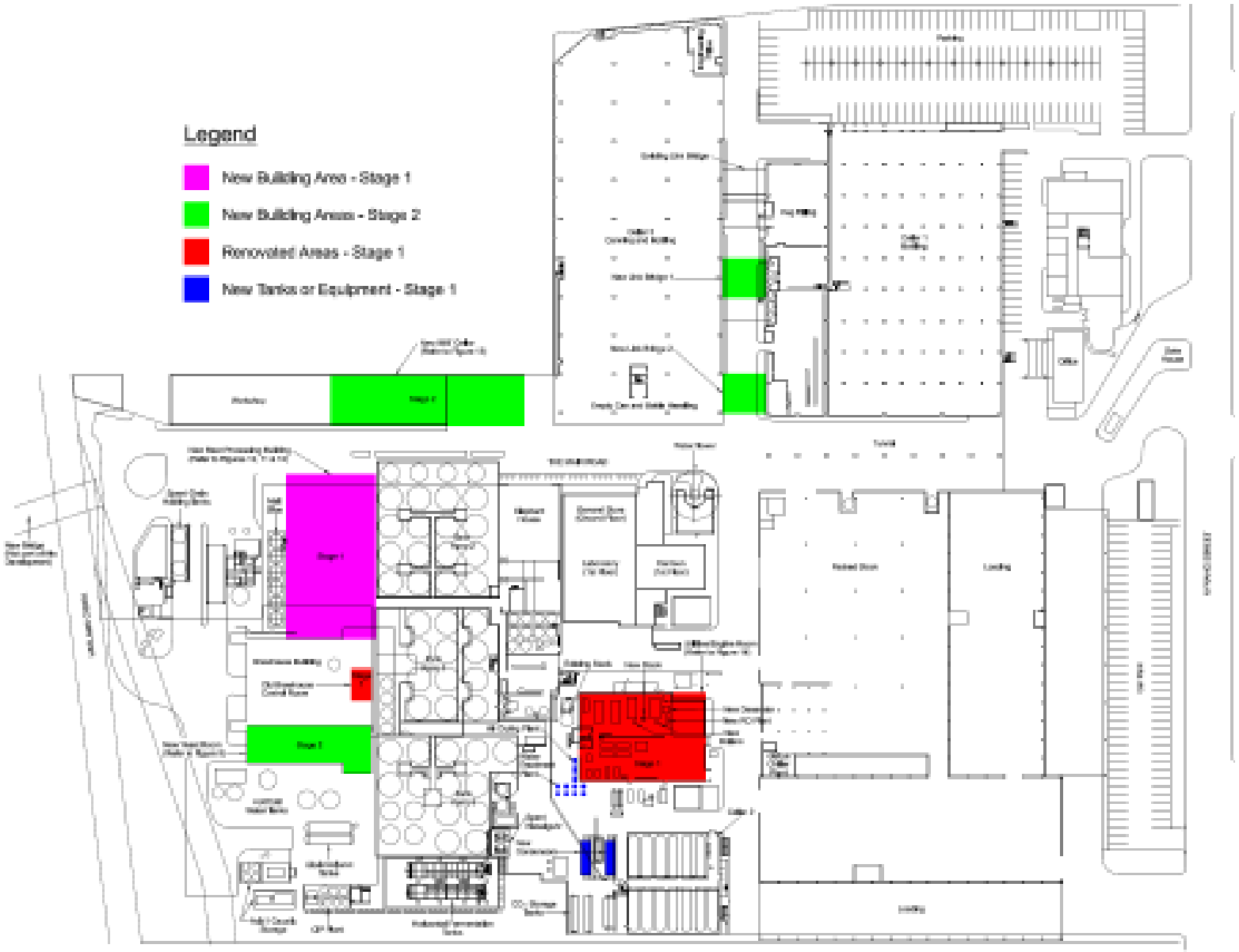

Figure 2- Existing and Proposed Site Layout

3. STATUTORY CONTEXT

3.1 Major Project

The proposal 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 a food and beverage processing facility with a capital investment value of more than $30 million, and therefore triggers the criteria in Schedule 1 of the *State Environmental Planning Policy (Major Projects) 2005*.

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

3.2 Permissibility

Under Section 75J of the EP&A Act, the Minister cannot approve the carrying out of a project that would be wholly prohibited by an environmental panning instrument.

The site is zoned 4(a) (General Industrial) under the *Auburn Local Environmental Plan 2000*, and the project is permissible with development consent in this zone.

Consequently, the Minister may approve the project.

3.3 Exhibition

The EA for the project was exhibited from 12 April 2007 until 14 May 2007, which satisfies the requirements for public consultation under 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 proposal against the relevant provisions of several SEPPs (including SEPPs 33 and 55), (see Appendix E), and is satisfied that none of the SEPPs substantially govern the carrying out of this project.

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

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

3.4 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 and environmental considerations and seeks to avoid any potential serious or irreversible damage to the environment, based on an assessment of risk-weighted consequences.

Tooheys 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.

3.4 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 with respect to the project.

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

4. ISSUES RAISED IN SUBMISSIONS

During the exhibition period, the Department received four submissions on the project:
- 3 from public authorities (Department of Environment and Climate Change, Auburn Council and Sydney Water); and
- 1 from the Nature Conservation Council.

The Department of Environment and Climate Change (DECC) raised no objection to the project and provided recommended conditions of approval in relation to management of contaminated groundwater and noise reduction strategies.

Auburn Council and Sydney Water raised no objections to the project; however they raised some concerns regarding stormwater management, construction traffic, contaminated land, flooding and heritage.

The Nature Conservation Council did not object to the project, but raised concerns about water and energy consumption, air emissions and emergency management planning.

A copy of the submissions is provided in Appendix C.

The Department has assessed the relevant issues raised in the submissions in Section 5 of this report. Tooheys has provided a response to submissions which is attached as Appendix B. The response to submissions in some instances supersedes the information in the EA.

5. ASSESSMENT

5.1 Traffic

The environmental assessment of the proposed upgrade focuses primarily on road traffic movements as the upgrade would have no effect on public transport, pedestrian or cycle networks. Tooheys revised the initial traffic assessment provided in the EA in response to submissions and the availability of information on the construction period of the adjacent Bevchain distribution centre, recently approved by Auburn Council.

Construction

The staging of construction activities would limit the period of greatest heavy vehicle movements to approximately five months from September 2007 to January 2008. This construction period would overlap with construction of the adjacent Bevchain distribution centre on Percy Street, by a period of only one month. The remainder of the construction period (to end of 2008) would require significantly less heavy vehicles and therefore would result in negligible change to traffic conditions.

During the period September 2007 to December 2007, construction traffic would access the brewery via Percy Street. Once the distribution centre construction commences in January 2008, all construction traffic associated with the brewery upgrade would be required to use the Nyrang Street entrance to the site. Additionally, as the brewery would remain operational during construction, all operational related traffic would also be required to use Nyrang Street, as Percy Street would not be available to Tooheys during construction of the distribution centre (eight months). During this period, it is estimated that the worst case would involve no more than 10 heavy vehicles associated with Tooheys construction accessing the site per day, with an average of less than five expected. In relation to Tooheys operational heavy vehicles, an increase of approximately 30% is expected to enter and exit the site via Nyrang Street during the construction overlap period (from January 2008 to August 2008). The impacts associated with construction of the Bevchain distribution centre would occur irrespective of the Tooheys brewery upgrade, as the project has already been approved by Auburn Council.

The proposed construction traffic routes are shown on Figure 4.

Figure 4: Proposed construction traffic routes

The increased number of vehicles using Nyrang Street during the construction period would have impacts on residents such as increased noise levels and potentially reduced Level of Service (LOS) at

the intersection of Nyrang Street and Parramatta Road. Noise impacts are considered in Section 5.2 below.

The LOS at Nyrang Street/Parramatta Road intersection is currently operating at F (poor). Tooheys has proposed a traffic management plan for the construction period that would manage movements to minimise disruption to LOS at this intersection. Given that construction would be limited to the hours of 7.00am to 6.00pm Monday to Friday and 8.00am to 1.00pm Saturdays, and the period of greatest use of heavy vehicles is limited to a five month period, the Department considers that the level of disruption is not significant. In addition, once construction of the distribution centre is completed, volumes of operational traffic from the upgraded brewery would reduce significantly (see further discussion below).

In order to minimise disruption from traffic during the construction period, the Department recommends that a Construction Traffic Management Plan be implemented throughout the construction period. This includes procedures for notifying residents of potential disruption and a process for on-going auditing and corrective action.

Operation
Output from the brewery would not change as a result of the proposed upgrade, however once the adjacent Bevchain distribution centre is operational, the number of heavy vehicles accessing the brewery would reduce significantly. Stock would be transferred from the brewery to the distribution centre via an internal road system which is expected to reduce the number of heavy vehicles entering and exiting the site via Nyrang Street by an average of 215 movements per day. The associated reduction in noise for Nyrang Street residents is considered in Section 5.2. The LOS of the Nyrang Street/Parramatta Road intersection may improve as a result of this reduction, however this was not quantified in the environmental assessment.

The Department concludes that the upgraded brewery would not result in increased traffic movements and once the adjacent distribution centre is operational, traffic movements would reduce significantly.

5.2 Noise

The nearest sensitive receivers for noise are located immediately to the east of the brewery on Nyrang Street. The brewery currently undertakes noise monitoring to determine compliance with the noise limits prescribed under the Environment Protection Licence (EPL). Monitoring has indicated that the primary sources of noise for residents in Nyrang Street are from vehicle movements and operational activities at Tooheys, in particular the movement of kegs and activities in the bottling plant.

Construction
The primary noise source from construction activities would be the increase in heavy vehicles using Nyrang Street. Increases of heavy vehicles would be no more than 10 per day (worse case) and on average, five per day during the initial construction phase from September 2007 to January 2008. This increase is unlikely to result in significant noise increases at residents in Nyrang Street.

During the period of overlap between construction of the brewery upgrade and Bevchain distribution centre (approximately eight months), an additional 10 heavy vehicles per hour would use Nyrang Street during day time hours and an additional 14 heavy vehicle movements would occur during the night time period (these movements are a combination of construction vehicles and operational vehicles). The assessment concluded that this would result in increases of up to 3dB(A) at Nyrang Street residences during the day and 14 more occurrences of potentially sleep disturbing noise levels during the night time.

The Department accepts that a level of disruption to residents would occur during the eight month construction period of the Bevchain distribution centre coinciding with the brewery upgrade works. To ensure that noise disturbance is kept to a minimum, the Department requires Tooheys to implement a Construction Noise Management Plan outlining mitigation measures and monitoring.

Operation
Production rates at the brewery would not change as a result of the upgrade, therefore, operational noise from the brewery would not change. However, once the adjacent Bevchain distribution centre is operational, there would be a significant reduction in the number of vehicles leaving the brewery via Nyrang Street. This would have an associated noise reduction for residences during day and night times.

The estimate heavy vehicle reductions and associated noise reductions are as follows:

- Morning peak (5am – 7am), estimate reduction by two-thirds translating to an estimate 5dB(A) reduction in noise from heavy vehicles over this period;
- Normal day time hours, estimate reduction by 50% translating to an estimate 3dB(A) reduction in noise from heavy vehicles over this period; and
- Night time hours, no significant change to vehicle movements and associated noise.

Despite the predicted reduction in noise levels from heavy vehicle movements, noise from operation of the brewery, and in particular unloading of kegs and activities in the bottling area, would remain unchanged.

Despite the reduced heavy vehicle movements and potential for noise reductions, the Department notes that exceedance of DECC criteria by up to 12dB(A) have been recorded at Nyrang Street residences during day and night times. As such, the Department recommends that Tooheys implement all reasonable and feasible noise reduction measures. Specific noise reduction measures have been incorporated into the attached conditions of approval. In addition, the Department recommends that Tooheys continue on-going noise monitoring to evaluate compliance with noise limits.

With implementation of the above noise reduction measures and the decrease in operational traffic using Nyrang Street, the Department is satisfied that the proposed upgrade would result in reduced noise levels from operation of the brewery.

5.3 Air Quality

Construction
Construction of the project would involve site excavation, removal of contaminated soil and heavy vehicle movements. These activities are likely to generate dust, potentially releasing volatile organic compounds (VOCs) and increase emissions from vehicles such as particulates, carbon monoxide (CO), nitrogen oxides and VOCs. Construction activities would be conducted in the western part of the site which is shielded from residents by existing buildings. In addition, Tooheys has provided a range of measures designed to minimise air quality impacts during construction in the Draft Statement of Commitments. These include watering of exposed soil and excavations, implementing OH&S procedures for adequate dispersion of VOCs, stockpile management, controlled site vehicle movements and covering of heavy vehicle loads. The Department believes that air emissions from the proposed construction works can be adequately managed by the measures proposed in the Draft Statement of Commitments.

Operation
Existing sources of emissions at the Tooheys Brewery include the ammonia cooling plant, boiler stack, brewhouse vents, process losses and vehicles. The resulting emissions include ammonia, CO, ethanol, nitrogen oxides, particulates, VOCs and heavy metals. Operation of the brewery also results in greenhouse gas emissions primarily associated with the use of electricity and natural gas.

The environmental assessment predicted air emissions from the upgraded brewery and compared them with background concentrations taken from the Chullora monitoring site. The background concentrations include emissions from surrounding industrial uses and transport and are therefore considered to be already elevated. The primary pollutants of concern are PM_{10}, NO_2 and CO. The assessment determined the maximum allowable increase in concentrations from the brewery upgrade as being the difference between background levels and the DECC limits.

Activities associated with the upgrade that are likely to change air emissions from the site include:
- Replacing gas fired boilers;
- Installation of lower stack (25m in height); and
- Reduced electricity and natural gas consumption.

<u>Replacing gas fired boilers</u>
Installation of new, more efficient gas fired boilers was assessed to determine the ground level concentrations of PM_{10} at nearby sensitive receivers. The assessment indicated that the new gas fired boilers would result in an average of less than one new exceedance per year of the DECC limit. The results are considered to be conservative as background levels are already elevated and the incremental concentration attributable to the boilers compared to the background concentration is less than 1%.

Installation of lower stack

Decommissioning of the existing 50m high stack and installation of a new 25m high stack would change the dispersion of air emissions across the site and surrounding areas.

Modelling was carried out for PM_{10}, NO_2 and CO for differing stack heights. Given that PM_{10} background concentrations are already close to the DECC limit and have exceeded it on occasion, the modelling focused on determining the stack height at which ground level concentrations of PM_{10} would not exceed the DECC limits. A stack height of 25m showed that PM_{10} concentrations would remain just under the limit with maximum concentrations occurring at residences located 200 metres to the south west of the stack (see Figure 5).

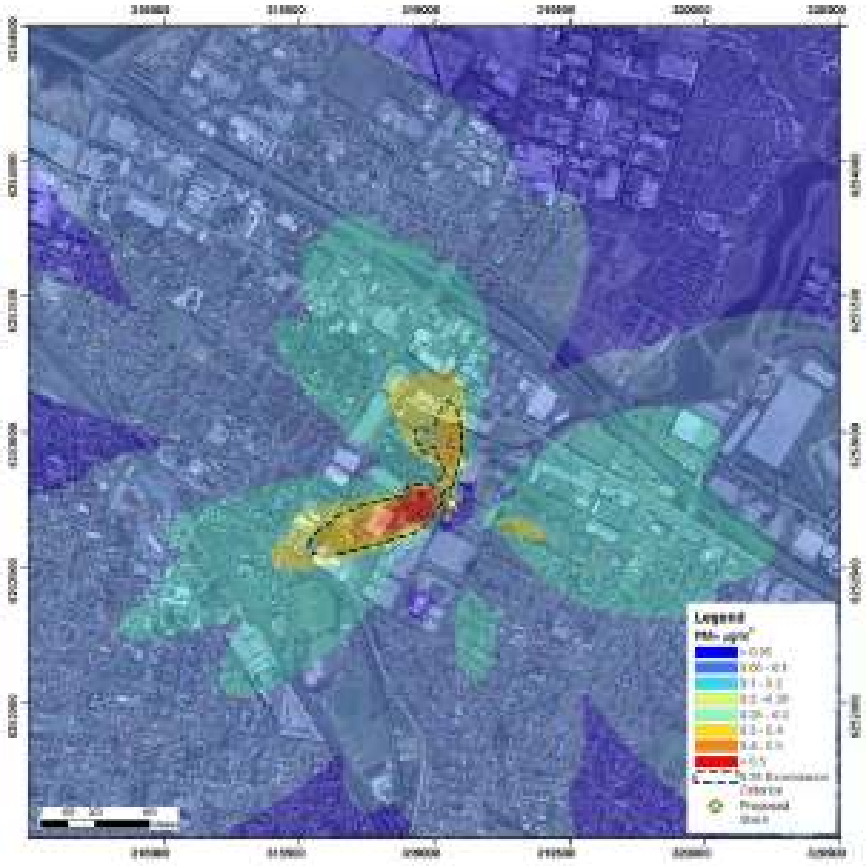

Figure 5: PM_{10} Concentration Contours (24 hour average)

The incremental increase of pollutants of concern resulting from the upgrade, in relation to background concentrations and the DECC limits is shown in Table 3. NO_2 and CO would increase slightly as a result of the upgrade but would remain well below the DECC limits.

Table 3: Summary of Ground Level Concentrations

		Maximum Ground Level Concentration at Sensitive Receptor (ug/m^3)			
Pollutant	**Background concentration (ug/m^3)**	**Increment**	**Cumulative**	**Criteria**	**Complies**
PM_{10}	49.72	0.25	49.97	50	Yes
NO_2	135	16.4	151.4	246	Yes
CO 15 min average	NA	14.7	NA	100,000	Yes
CO 1 hour average	6,300	13.8	6,313.8	30,000	Yes
CO 8 hour average	3,000	5.77	3,005.8	10,000	Yes

The assessment concluded that the reduced stack height would result in sufficient dispersion of pollutants of concern provided that the:

- Stack height is no less than 25m (for the two stack sources);
- Stack internal diameter is no more than 0.9m; and
- The boiler properties meet the manufacturer's specifications for flue gas exit temperature.

These design requirements are provided in the Draft Statement of Commitments and have been incorporated into the attached recommended conditions of approval.

Reduced electricity and natural gas consumption
Key improvements to plant and equipment at the brewery would result in the following reductions of energy consumption:

- Electricity reduced from 10.5 kWh/hl of beer to 9 kWh/hl of beer; and
- Natural gas reduced from 82.7 MJ/hl of beer to 70 MJ/hl of beer.

The associated reduction in greenhouse gas emissions is shown in Table 4.

Table 4: Greenhouse Gas Emissions Reductions

Emission Source	Existing Facility (kg CO_2-e/ kL beer)	Upgraded Facility (kg CO_2-e/ kL beer)	% Decrease
Process Emissions	10	0	100%
Electricity	101	89	12%
Natural Gas Usage	58	50	14%
LPG Usage	2	2	0%
Waste	1	1	0%
Total	**179**	**142**	**21%**

The Department and the DECC are satisfied that provided the conditions associated with stack design are adhered to, the proposed upgrade would not result in unacceptable air quality impacts. The project may lead to one exceedance per year of the DECC limit for PM_{10}, however as background levels are already elevated, the Department considers the contribution by Tooheys to be insignificant.

5.4 Contamination

The proposed upgrade works would require removal of one underground storage tank (UST) and decommissioning in-situ of a further six USTs. The UST to be removed is located in the area proposed for construction of the new BBT cellar near the north eastern boundary of the site. The contamination assessment submitted indicates that this UST was used as a petrol refuelling tank and was decommissioned (sand filled and capped) approximately 20 years ago. Tooheys has revised their construction programme following the exhibition period and indicate that construction of the new BBT cellar and removal of the UST would occur during Stage 2, which has not been scheduled. Given construction of Stage 1 would continue until the end of 2008, removal of the UST is unlikely to happen until after 2008.

The six USTs to be decommissioned in-situ previously contained heavy fuel oil for the boilers, however these were emptied approximately 16 years ago when the boilers were converted to natural gas. These six USTs are noted to contain residual fuel and water which would be removed as part of decommissioning and the tanks would be filled with inert material. These works would occur during Stage 1 of construction. Analysis of soil and groundwater in the vicinity of the USTs found residual contamination as described below.

Soil
Elevated concentrations of total petroleum hydrocarbons (TPH) were found in two boreholes located near some of the abandoned USTs that stored heavy fuel oil. Concentrations in one of these boreholes was 2.5 times greater than the DECC assessment criteria and therefore constitutes a contamination hotspot. The identified contamination is located adjacent to the existing utilities building which would be renovated as part of the proposed upgrade. Areas to be excavated as part of the project (for construction of the BBT cellar and Beer Processing Building) were sampled and showed no exceedance of assessment criteria.

Contaminated soil identified in the area of the utilities building is unlikely to be disturbed as part of the upgrade works. Given the site is currently operational and much of it is covered by hardstand, it would not be feasible to excavate the contaminated soil identified. On this basis, it is considered appropriate to continue use of the site for industrial purposes and monitor the contaminated soil on an on-going basis.

Sampling did not indicate any contaminated soil in the vicinity of the UST to be removed for construction of the BBT cellar. However, removal of the UST and subsequent validation sampling and analysis would

identify any residual contamination. When decommissioning works are undertaken, a Site Management Plan would be required, as well as details of an on-going monitoring programme.

The Department is satisfied that the contaminated soil identified would not be disturbed as a result of the upgrade and that it would be adequately monitored. The Department recommends that the Site Management Plan detail procedures for decommissioning the USTs, validation and monitoring. These requirements are incorporated in the recommended conditions of approval (Appendix A).

Groundwater

Groundwater monitoring undertaken adjacent to the refuelling and boiler USTs showed levels above the adopted assessment criteria for TPH, toluene and zinc. Monitoring wells located near the boundary of the site to the west and north-east of the boiler USTs, and in the inferred direction of groundwater flow, were below laboratory detection limits indicating that it is unlikely that the contamination is migrating off site.

The proposed upgrade would not require bulk excavation for construction of new buildings, however one UST would be removed as part of the works. The removal of the UST and decommissioning of six other USTs in-situ would remove a potential contaminant source thereby reducing the overall risk of groundwater contamination. However, the Department recommends that on-going monitoring of groundwater be undertaken during operations to ensure that contamination has not moved off site or become worse. Monitoring from groundwater wells located adjacent the UST to be removed, and along the boundary of the site is required on a quarterly basis. In addition, the DECC recommend that contingency plans be developed if contaminated groundwater is found after decommissioning of the USTs.

The Department is satisfied that the proposed upgrade would reduce contamination sources on site. The requirement for a Site Management Plan would ensure that contaminated soil is appropriately excavated, handled and remediated/disposed of, and adequate validation sampling and analysis is undertaken. The recommended conditions for groundwater monitoring would ensure that groundwater contamination is adequately managed.

5.5 Hazards and Risk

An assessment conducted by Tooheys considered the risks associated with the proposed brewery upgrade in relation to storage and transport of dangerous goods and impacts of potentially hazardous events.

Dangerous Goods

The upgrade would result in a net reduction in the total quantity of ammonia stored and handled at the site from approximately 15 tonne to 11 tonne. This reduction would result in removal of eight existing ammonia condensers and replacement with three new condensers and a reduction in deliveries of ammonia by approximately two per annum. Ammonia would be replaced by glycol which is currently used on site and is not a dangerous good.

Other dangerous goods currently stored on site, such as sodium hydroxide, carbon dioxide, phosphoric acid, hydrogen peroxide, peryoxyacetic acid, hydrogen peroxide, LPG and liquid oxygen would not change in quantity as a result of the upgrade.

The Department is satisfied that the risks posed by storage and transport of hazardous goods would not be increased by the proposed upgrade.

Events with potential to have off site impacts

The release of ammonia was identified in the assessment as a key event with potential for off-site impacts. The assessment conducted for the existing plant indicated that the level of off-site fatality risk was below the published NSW criteria set out in *Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning* (HIPAP 4). The assessment also concluded that large releases have the potential to cause off site injury or irritation, when compared to the Acute Exposure Guideline Levels (AEGLs) and that small releases would exceed the low AEGL levels for 10 minutes exposure. Tooheys maintain that it is unlikely for the frequency of releases to be as low as the relevant criteria in HIPAP 4 and that they can be easily mitigated by either site based response or from the NSW Fire Brigade.

Other risk reduction measures proposed by Tooheys include emergency shutdown systems, trained operators on site during operating times, ammonia leak detectors and water spray systems to absorb any leaked gas.

The Department is satisfied that the proposed upgrade would result in a reduction of the risks from the site due to the reduction in ammonia inventory and the reduction of the number of plant items associated with ammonia.

Recommended conditions of approval specifically require Tooheys to update the site Safety Management System to ensure that safety equipment such as leak detectors and emergency systems are maintained and tested regularly to assure reliability. A condition of approval would also require Hazard Audits to be carried out at regular intervals by a suitably qualified independent person approved by the Director General to ensure that safety systems and practices are maintained and operational.

5.6 Consolidation of Planning Approvals

The Tooheys Brewery is subject to numerous existing development consents issued by Auburn Council from 1973 to 2006. The development consents cover a range of approved upgrades to process equipment and building modifications. A summary of the more recent consents is shown in Table 5.

Table 5: Existing Consents

DA No.	Consent Authority	Date	Description
270/2006	Auburn Council	31 August 2006	Construction of new CO_2 tank
92/2006	Auburn Council	30 May 2006	Construction of 4 x 400hL maturation tanks, extension of existing cooling tower platform to accommodate 1 x cooling tower and CO_2 condenser, construction of new platform and enclosure for new CO_2 balloon to roof of engine room associated with existing brewing facility
20/2006	Auburn Council	12 April 2006	Construction of new link bridges between filling halls within existing brewery premises
402/04	Auburn Council	20 October 2004	Construction of 2 mini fermenters and a water filter vessel to be located beside the brewhouse
215/04	Auburn Council	2 September 2004	Erection of 6 x 80 tonnes malt silos and 3 x 3600hL fermenting vessels
544/03	Auburn Council	22 December 2003	Erection of a platform on the warehouse roof and installation of cooling towers;
284/96	Auburn Council	3 June 1997	Removal of the existing car parking area adjacent to Nyrang Street and extension of an existing canopy over this area to provide undercover loading for trucks and additional storage area; and to establish a new dispatch office

Given the complexity posed by differing consents, Tooheys has requested that a single consent is issued to cover existing operational conditions and any new conditions associated with the proposed upgrade. A review of the consents has identified a number of operational conditions that need to be incorporated into the consent for the upgrade works. These include conditions relating to:

- Spill containment;
- Maintenance of re-vegetated corridor along Haslams Creek and other landscaped areas;
- Stormwater and wastewater management;
- Maintenance and operation of cooling towers;
- Fire safety;
- Vehicle movements, delivery locations, parking arrangements, ingress/egress; and
- Restriction on the sale or display of goods on site.

These conditions have been incorporated into the attached recommended conditions of approval (Appendix A).

5.7 Other Issues

Socio-Economic

Capital investment in the project is $70 million and would result in reduction of approximately 10 full-time brewery technicians and a reduction of 20 full-time equivalent casual brewery technicians (on an annual

basis). Tooheys has indicated that voluntary redundancy packages would be made available as well as other forms of support including financial advice and re-deployment advice.

Odour

Odour emissions from the brewery originate primarily from wort boiling operations releasing VOCs. Some emissions also arise from post-fermentation including ethanol and ethyl acetate. The upgrade would not alter the wort boiling operations; therefore emissions from this process would not change. Installation of new equipment as part of the upgrade would reduce production losses associated with post-fermentation; hence odorous emissions associated with this process would be reduced.

Tooheys currently implements an Odour Reduction Programme which would be maintained throughout operation of the brewery. The Department is satisfied that on-going implementation of this programme and the improvements provided by the upgrade would sufficiently manage odour emissions from the brewery.

Other Issues

Other issues raised in the EA or by government agencies are considered to be minor issues or of minor environmental impact. The Department is satisfied that they can be controlled, mitigated or managed through appropriate conditions of approval.

6. RECOMMENDED CONDITIONS OF APPROVAL

The Department has prepared recommended conditions of approval for the project (see Appendix A). These conditions are required to:

- Minimise traffic and noise disruption during construction;
- Monitor and manage air emissions during operation;
- Monitor and manage contamination; and
- Consolidate existing planning approvals

7. CONCLUSION

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

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

This assessment shows the key issues of concern relate to construction traffic, noise and contamination. Other issues include air quality and hazards.

The Department has assessed these concerns in detail, having regard to the various objects of the EP&A Act, and is satisfied that the proposed measures can effectively reduce the impacts of the project to acceptable levels. The Department is also confident that the traffic and noise impacts associated with the construction phase of the project can be mitigated and managed to achieve acceptable levels of environmental performance.

The project would result in capital investment of $70 million in the locality; however the upgraded plant would result in job losses as production efficiency is increased. The project would generate environmental benefits through reduction in energy and water consumption and a reduction in vehicle movements during operation.

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

8. RECOMMENDATION

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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APPENDIX A – CONDITIONS OF APPROVAL

See Project Approval on Department of Planning's website.

APPENDIX B – TOOHEYS RESPONSE TO SUBMISSIONS

APPENDIX C – SUBMISSIONS

APPENDIX D – ENVIRONMENTAL ASSESSMENT

See Arup website (link provided on Department of Planning's website)
http://www.arup.com.au/tooheys_lidcombe/

APPENDIX E – CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

State Environmental Planning Policy No. 33
State Environmental Planning Policy No. 33 – Hazardous and Offensive Development applies the brewery 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 nature and quantities of dangerous goods stored at the site would reduce as a result of the project and therefore the level of off-site risk would also reduce. A preliminary hazards analysis undertaken by Tooheys indicated that the proposal 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.*

A preliminary site investigation undertaken for the project indicated petroleum hydrocarbon contaminated soil and groundwater consistent with the industrial use of the site. Decommissioning of underground storage tanks is proposed as part of the project. The risk of exposure to identified contamination is considered to be low, given that the majority of the site is occupied by buildings or covered by hardstand. Limited excavation would be undertaken as part of the project, hence the potential to disturb contaminated material is considered to be low. A requirement for validation sampling and analysis is included in the recommended conditions of approval. The Department is satisfied with the consideration of SEPP 55 contained in the Environmental Assessment.

Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
Sydney Harbour Catchment Regional Environmental Plan sets out general principles for development of land within the catchment. The principles relate to protection of the hydrological, ecological and geomorphological processes within the catchment as well as the visual qualities of the harbour.

The Tooheys brewery is located within the Sydney Harbour Catchment, but is not highlighted as a Foreshores and Waterways Area, a Strategic Foreshore Site, or a designated Heritage Item or Wetland Protection Area.

The environmental assessment outlined measures for controlling water quality discharged off site during construction and operation, including erosion and sediment controls. The assessment also indicated that there would be no impact on the adjacent Haslams Creek.

The Department is satisfied with the consideration of SREP (Sydney Harbour Catchment) in the Environmental Assessment.

Auburn Local Environmental Plan 2000 (ALEP)
The development would be located on land zoned 4(a) (General Industrial) under the ALEP. The proposed development is permissible as an industry within this zone. The objectives of this zone are as follows:

- *(a) to provide sufficient land to be used primarily for a broad range of industrial uses,*

(b) to permit a range of uses that are compatible with industrial areas,
(c) to encourage industrial uses that will contribute to economic and employment growth of the locality,
(d) to prohibit shops in this zone, but permit minor retail development only where it is providing for the daily convenience needs of the local workforce or is ancillary or incidental to the main purpose of development.

The Department considers that site is suitable for the project and that the project is not inconsistent with these objectives. The Department is satisfied with the consideration of the ALEP as contained in the EA.