



**REPORT ON THE ASSESSMENT OF
DEVELOPMENT APPLICATION NO. DA-265-8-2002
PURSUANT TO SECTION 80 OF THE ENVIRONMENTAL PLANNING AND
ASSESSMENT ACT, 1979**

**PROPOSAL BY SHOALHAVEN STARCHES PTY LTD TO CONSTRUCT AND
OPERATE AN ADDITIONAL EFFLUENT STORAGE POND AT THE
SHOALHAVEN STARCHES FACTORY SITE, BOLONG ROAD, BOMADERRY,
SHOALHAVEN LOCAL GOVERNMENT AREA**

Department of Planning

December 2002

EXECUTIVE SUMMARY

A development application (DA No. 265-8-2002) was lodged by Shoalhaven Starches Pty Ltd (The Applicant) on 23 October 2002 for the construction of an additional effluent storage pond (Pond No. 7) on the Company's Environmental Farm. The land is owned by the Applicant and is located generally north of Bolong Road at Bomaderry, in the Shoalhaven local government area.

The Shoalhaven Starches factory complex in Bomaderry comprises ethanol, glucose and starch plants as well as a wastewater treatment facility which treats and stores effluent produced at the various Shoalhaven Starches plants. The effluent is stored in ponds on the Company's 1000 ha Environmental Farm and irrigated onto the farm as a means of disposal.

The purpose of this Development Application is to provide additional effluent storage capacity to prevent overtopping of the existing ponds during extended periods of wet weather.

The proposed development involves a capital investment of \$900,000. Construction is expected to take 24 weeks, during which time, approximately 10 jobs will be created.

Pursuant to a declaration made by the Minister for Planning on 1st June 2001 under section 76A(9) of the *Environmental Planning and Assessment Act, 1979* (the Act) that the Shoalhaven Starches Factory and the Environmental Farm are State significant, the Minister is the consent authority for the development application.

Under the Act, the proposal is classified as designated development and accordingly, an Environmental Impact Statement (EIS) accompanies the DA. An additional approval from the Environmental Protection Authority (EPA) is also required under the *Protection of the Environment Operations Act 1997*, making the proposal integrated development. The EPA has issued its General Terms of Approval stating the terms under which it would be prepared to issue an Environment Protection Licence, and these have been incorporated into the recommended draft instrument of consent.

The DA and accompanying EIS have been exhibited and notified, in accordance with the Act.

The Department received 6 submissions in relation to the exhibition of the development application and accompanying EIS, 1 from a public authority. The key issues raised in the submissions were:

- odour impacts;
- flood impacts;
- water quality impacts; and
- soil management.

These issues have been addressed in section 6 of this assessment report.

The Department has assessed the development application and the submissions, and determined that the development can be constructed and operated within appropriate environmental limits. Therefore, the proposed development could be approved on a technical basis. If the Minister agrees, the Department recommends imposition of conditions as per the draft instrument of consent. It is considered that the conditions of the recommended instrument of consent impose appropriate measures to ensure the environmental impacts associated with the proposed development are managed, mitigated and monitored.

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1. INTRODUCTION

On 31 January 2002, the Department received a development application from Shoalhaven Starches Pty. Ltd (the Applicant) for the construction of an additional effluent storage pond (Pond No. 7) on the Company's Environmental Farm. The land is owned by the Applicant and is located generally north of Bolong Road at Bomaderry, in the Shoalhaven local government area.

The Shoalhaven Starches factory complex in Bomaderry comprises ethanol, glucose and starch plants as well as a wastewater treatment facility which treats and stores effluent produced at the various Shoalhaven Starches plants. The effluent is stored in ponds on the Company's 1000 ha Environmental Farm and irrigated onto the farm as a means of disposal.

The purpose of this Development Application is to provide additional effluent storage capacity to prevent overtopping of the existing ponds during extended periods of wet weather.

This report represents the Department's assessment of the proposed development, in accordance with the *Environmental Planning and Assessment Act 1979*. The Department has assessed the development application and the submissions, and determined that the development can be constructed within appropriate environmental limits. If the Minister agrees, the Department recommends imposition of conditions as per the draft instrument of consent. If consent was granted, it is considered that the conditions in the Instrument of Consent would impose appropriate measures to ensure the environmental impacts associated with the proposed development are managed, mitigated and monitored.

2. SITE CONTEXT

2.1 Site Location

The proposed development site is located on land known as Shoalhaven Starches Environmental Farm which is located north of Bolong Rd in Bomaderry (see Figure 1). The land is described as Lot 2 DP 833181. The site has frontage to Hannigan's Lane, Bomaderry in the Shoalhaven local government area and is owned by Shoalhaven Starches Pty. Ltd., a member of the Manildra Group of Companies. The existing Shoalhaven Starches Factory Site is located south of Bolong Road.

2.2 Site Description

The proposed development site has an area of 33.97 hectares. This site is part of the Shoalhaven Starches Environmental Farm which covers an area of 1,000 hectares. Pond No. 7 is proposed to be sited within the Wet Weather Storage Pond Complex, which currently contains six effluent storage ponds with a total capacity of 925 ML. The proposed Pond No. 7 would be situated to the east of and immediately adjacent to the existing effluent storage pond No. 5 (See Figure 2).

The site is flat and vegetated with pasture. With the exception of two trees, the site is clear of native vegetation.

The soil characteristics of the proposed site of Pond No. 7 are described as organic topsoil underlain by fine-grained silty sand to sandy silt, which has been referred to as a fluvial or estuarine deposit, and has been identified as potential acid sulfate soil. The topsoil and estuarine deposits are generally underlain by silty clay, however at particular locations along the western side of the proposed dam, the silty soils occur below a sandy clay layer.

Figure 1. Location of proposed development site in the context of the local area. (inc surrounding land uses.)

Figure 2. Existing site layout.

2.3 Surrounding Land Uses

The site is predominantly surrounded to the north and the east by the remainder of the Shoalhaven Starches Environmental Farm, which has a total area of approximately 1,000 ha and is used for grazing and the irrigation of effluent generated from the Shoalhaven Starches factory complex located approximately 1.5 km to the west of the pond site.

The proposed site lies adjacent to Bolong Road. To the south of the proposed site, on the opposite side of Bolong Road, is the Shoalhaven paper factory complex.

Residential land uses in the surrounding area comprise: rural residential allotments fronting Hannigan's Lane approximately 1 km to the west of the development site, rural dwellings located approximately 700 m north east and 500 m south east of the site.

3. DEVELOPMENT PROPOSAL

3.1 Outline of the Proposal

The Applicant is seeking consent for the construction and operation of an additional effluent storage pond (Pond No. 7) with a capacity of 220 ML.

The pond would be triangular in shape with dimensions of approximately 268 m by 247 m. The pond footprint would cover an area of 4.7 hectares. The construction of the pond would involve a maximum excavation below natural ground level of 5.7 metres. The pond walls would have a maximum height above ground level of approximately 5.0 m (7.0 m AHD), which is similar in height to the existing adjoining ponds. The proposed pond would integrate into the existing ponds system.

The pond walls would have internal batter slopes of 3 (Horizontal) : 1 (vertical) and external batter slopes of 4 (horizontal) : to 1 (vertical). The walls would be sown with pasture, as with the existing ponds to afford protection from erosion.

Extended wet weather during the period January to March 2002 resulted in minimal volumes of effluent being able to be disposed of by irrigation on the Environmental Farm. The consequence of this was that most effluent being generated was diverted to the existing wet weather storage dams leading to increasing concern that should a wet winter follow the wet autumn, the storage capacity of the dams would be inadequate.

The development of Pond No. 7 has been proposed to ensure sufficient wet weather capacity is available at the Environmental Farm to ensure the security of the overall Shoalhaven Starches operations during prolonged periods of wet weather.

The construction of the proposed Pond No, 7 would take approximately four to six months and would involve:

- stripping of topsoil over the construction site;
- formation of pond walls from subsoil from the excavation;
- stockpiling of soil deemed unsuitable for dam construction elsewhere on the site as appropriate, and
- dozing of topsoil over the dam walls to prevent erosion and facilitate revegetation.

The proposed development would not result in additional employment in the long term. However, approximately 10 would be employed on a full-time basis during the construction stage. Capital investment for the pond is estimated at \$900,000.

Construction is proposed to be undertaken Monday to Friday from 7:00am until 6:00pm and Saturday from 8:00am until 1:00pm. No construction would take place on Sunday or a public holiday.

The layout of the Shoalhaven Starches Environmental Farm including the proposed Pond No. 7 is shown in Figure 2. Traffic access to the site during construction would be from Hannigan's Lane, a bitumen sealed two way rural road that intersects with Bolong Road. Due to 5 tonne load limits on Bolong Road to the east of the site, heavy construction traffic would travel to the site via the Princes Highway and Bolong Road to the west of the site.

3.2 Justification for the Proposal

Should the effluent storage capacity of the Environmental Farm be exceeded during periods of extended wet weather, action must be taken to prevent overtopping of the ponds. Possible actions include temporary closure of the plant or emergency discharge to Broughton Creek and the Shoalhaven River.

Closure of the plant would have implications for the plant, employees and also those industries that Shoalhaven Starches supply, including the food, beverage, confectionary and paper producing industries which may also be required to suspend production as a result.

Emergency discharge of effluent to either Broughton Creek or the Shoalhaven River is not supported by the EPA at this stage due to concerns regarding the potential environmental impacts of such an action, although river discharge of treated effluent would be the subject of future environmental studies.

Unseasonally high rainfall experienced during Autumn of 2002 meant that the capacity of the environmental farm to be irrigated was minimised and the ponds had very little storage capacity remaining at the start of Winter. Winter was exceptionally dry, which prevented exceedance of storage capacity. However, Shoalhaven Starches Pty. Ltd. is concerned that the existing wet weather storage may not be adequate in the future.

A study undertaken by Agricultural Water Management Pty Ltd. determined that the additional storage required to remove the risk of overtopping of the storages, based on rainfall records for the past 58 years, is 220 ML, the capacity of the proposed pond.

4. STATUTORY PLANNING FRAMEWORK

4.1 Permissibility

The proposed development is located within the Shoalhaven local government area. Under the *Shoalhaven Local Environmental Plan, 1985* (LEP) the proposed Project area is zoned 1(g) (Rural "G" (Flood Liable)). The Applicant advises that the Proposal is consistent with the objectives of the LEP and of Zone No. 1(g) (Rural "G" (Flood Liable)) and is permissible with development consent. The Department is satisfied that the Proposal is permissible and consistent with LEP and zone objectives.

4.2 Legislative Context

In accordance with the provisions of the *Environmental Planning and Assessment Act 1979* (the Act), the proposed development is classified as designated and integrated development.

As required for designated development, an Environmental Impact Statement (EIS) was prepared and, in accordance with Division 4, Part 6 and Schedule 2 of the Regulation, the development

application and accompanying EIS were publicly exhibited for 30 days. Exhibition of these documents took place between Thursday 24th October, 2002 and Friday 22 November 2002 at the following locations:

- Department of Planning - Head Office, Sydney;
- Department of Planning - Wollongong Office;
- Shoalhaven City Council; and
- Nature Conservation Council of NSW, Sydney.

Landowners and occupiers within a radius of 3 km from the proposed Pond No. 7 were notified in writing about the proposed development. The three km radius was selected for the following reasons:

- advice provided by Webb, McKoewn and Associates Pty Ltd that a 3 km radius would extend beyond the limit of the floodplain; and
- advice provided by the EPA and Council that the key areas impacted by odour were Bomaderry and Terara. The 3 km radius incorporated these areas.

In addition, the Department requested that the Applicant conduct a community consultation program in parallel with the EIS process. The community consultation was conducted, and is believed to have included public meetings.

The Department considers that the requirement of the Act to notify landowners adjoining to the development site and potentially adversely affected landowners has been met.

In accordance with the provisions of clauses 87, 88 and 89 of the Regulation, notification of the proposed development was placed in the *South Coast Register* on Wednesday 23rd October 2002 and Wednesday 6th November 2002.

The newspaper notifications provided details of the proposal, exhibition locations and dates, and information on how interested parties could make a submission. A notice providing the same information was also displayed on the proposed development site for the duration of the exhibition.

The Department considers that the requirement of the Regulation to publicly advertise the proposed development has been met.

Integrated Development

The development proposal constitutes integrated development, as defined by section 91 of the *Environmental Planning and Assessment Act 1979*. In addition to development consent, the Pond No. 7 proposal requires an Environment Protection Licence (EPL) from the Environment Protection Authority (EPA) under the *Protection of the Environment Operations Act 1997*.

The EPA was notified of the lodgement of a development application (DA) for the proposal and given copies of the DA and accompanying EIS. Following the supply of copies of submissions in response to the exhibition of the development application, the EPA supplied comments and General Terms of Approval to the Department, which have been incorporated into this assessment report and the Instrument of Consent. The EPA's provision of General Terms of Approval indicates that the EPA would be prepared to issue an EPL, should the Minister determine to approve the proposal. The EPL would be consistent with the development consent.

Designated Development

The proposed Effluent storage pond No. 7 constitutes designated development under Part 1 of Schedule 3 of the *Environmental Planning and Assessment Regulation 2000* (the Regulation) as it is a “**waste management facility**” and **will be located “on a floodplain”**. This is defined as:

Waste management facilities or works that store, treat, purify or dispose of waste or sort, process, recycle, recover, use or reuse material from waste and:

(d) that are located

(v) on a floodplain.

As the proposal involves the storage of effluent on a floodplain, it is classified as designated development under section 77A of the Act, irrespective of the quantity of effluent stored.

4.3 Minister's Role

Pursuant to a declaration made by the Minister for Planning on 1st June 2001 under Section 76A(9) of the *Environmental Planning and Assessment Act, 1979* that the Shoalhaven Starches Factory and the Environmental Farm are State significant, the Minister is the consent authority for the development application.

The Minister, as consent authority, has the power to approve (subject to conditions or without conditions) or refuse the development application in accordance with section 80 of the *Environmental Planning and Assessment Act 1979*.

4.4 Relevant Environmental Planning Instruments

The proposed development is located within a coastal zone and is therefore within the area regulated by *State Environmental Planning Policy No. 71 – Coastal Protection* (SEPP 71). As provided by Clause 25 of SEPP 71, the policy does not apply to this proposal as the development application for Pond No. 7 was lodged with the Department prior to the commencement of the Policy. However, the proposal is generally consistent with the provisions of the SEPP 71.

The proposed development is subject to the *Illawarra Regional Environmental Plan No. 1* (IREP). Consideration of the proposed development in the context of the objectives and provisions of the IREP is provided below.

Illawarra Regional Environmental Plan No. 1

The *Illawarra Regional Environmental Plan No. 1* (IREP) provides a framework to guide and control growth, development and environmental protection in the region. IREP objectives relevant to the proposal include those relating to rural lands, industry, waste disposal and coastal land. The Department supports the Applicant's position that the Proposal is consistent with development related provisions of the plan, and not inconsistent with environmental protection provisions.

No other State Environmental Planning Policies or Regional Environmental Plans apply to the proposal.

5. CONSIDERATION OF ISSUES RAISED IN SUBMISSIONS

The Department received a total of six submissions in response to the exhibition of the development application and EIS for the proposed Pond No. 7.

One submission was received from the Department of Land and Water Conservation (DLWC) following a request for input by the Department. The other submissions were received from individual members of the public. All of these submissions objected to the proposed development in relation to odour. The EPA (integrated approval body for the development) and the Department requested additional information from the Applicant on one occasion (in relation to traffic, heritage and flooding impacts), to which the Applicant duly responded.

A summary of the major issues raised by each of these parties is presented in Section 6 of this assessment report, with full details of each submission provided in Appendix C. The Department considers that all parties have been afforded every opportunity to comment on the proposal and that it has met the requirements of the Act in relation to receipt and consideration of submissions.

The Department notes that The Council was formally invited to lodge a submission in relation to the Pond No. 7 EIS but that no submission was received by the Department.

6. CONSIDERATION OF ENVIRONMENTAL ISSUES

The Department has reviewed the Environmental Impact Statement for the proposed development, and duly considered all submissions from government authorities and members of the public. As a result, the Department has identified a number of environmental issues associated with the proposal. A full consideration of each of the issues listed is provided from section 6.1 to section 6.12 of this report.

Issues identified as being of **key importance** to environmental planning and assessment:

- construction noise impacts;
- air quality (odour and dust) impacts; and
- flooding impacts.

Issues identified as being of **importance** to environmental planning and assessment:

- water quality impacts;
- visual impacts;
- construction traffic impacts;
- acid sulfate soil management; and
- waste management.

Other issues associated with the proposed development are:

- flora and fauna impacts;
- impacts to agricultural land;
- hazards and risk impacts; and
- heritage.

6.1 Noise Impacts

Applicant's Position

The Applicant has advised that noise impacts would be limited to the construction period. Impacts would result from noise and vibration caused by:

- construction plant (bulldozers, excavators, cranes and compactors); and
- construction traffic (trucks and personnel vehicles).

The Applicant expects that construction of the proposed development would be completed within four to six months.

No quantitative noise assessment was conducted by the Applicant. Noise mitigation measures proposed by the Applicant are to:

- restrict construction to daylight hours (i.e. daylight saving time 6 am to 8 pm Monday to Saturday). Activities on Sundays would be restricted to emergency and maintenance activities (eg watering during windy conditions); and
- take all practical measures to silence construction equipment.

The Applicant recognises that compliance with the EPA's Environmental Noise Control manual is required.

Issues Raised in Submissions

One public submission raised concern about noise from the Shoalhaven Starches factory, particularly in relation to night time noise. This is unrelated to the proposed Pond No. 7. Noise emissions from the pond would be restricted to the period of construction and would occur during the daytime only.

The EPA provided that the hours of construction shall be restricted to the following times:

- 7:00 am to 6:00 pm Mondays to Fridays;
- 8:00 am to 1:00 pm on Saturdays; and
- at no time on Sundays and public holidays.

Department's Position

Construction Impacts

No quantitative noise impact assessment was conducted for the purposes of the EIS. Given the location of residential receivers within approximately 500 m and 1 km of the site, it is the Department's position that the measures proposed by the Applicant to minimise noise should be supplemented and that a Construction Noise Management Plan must be prepared and implemented to ensure compliance with the EPA's Construction Noise Criteria.

The Construction Noise Management Plan has been included as a condition in the instrument of consent and, should consent be granted, would necessitate noise monitoring, assessment and where required, mitigation to ensure compliance with EPA criteria and to address any complaints should the Minister approve the proposal.

It should be noted that the EPA, in its General Terms of Approval have restricted the hours of construction from those presented in the EIS. This may result in an extended period of construction which must be taken into consideration when determining suitable noise criteria.

ROAD TRAFFIC NOISE

Construction traffic would have the largest impact during a two week period at the commencement of construction (during site set up). Proposed traffic movements during this period, as advised by the Applicant, would comprise approximately 2 trucks (4 movements) per day. These trucks would deliver plant and equipment to the site.

Following this initial period, the Applicant has advised that there would only be 1 to 2 trucks (2 to 4 movements) to the site per week.

The construction workforce is likely to generate 20 light vehicle movements per day throughout the period of construction.

The Department is satisfied that traffic noise would not have a significant impact on nearby receivers. However, the Applicant has advised that heavy vehicle movements would be most likely to occur at 6.30 am. This reflects the extended construction hours assumed in the EIS. The Department recommends that all heavy truck movements shall be restricted to the hours set by the EPA in their General terms of Approval, except if otherwise required by the RTA or the police in relation to oversize or overweight loads.

Operational Impacts

Pond No 7 would not be the source of noise emissions during normal operating conditions. Potential noise relates to maintenance/repair of the ponds should they be damaged during flood conditions. The Department recommends that any activities relating to operation of the pond that have potential to emit noise shall be subject to the same restricted hours as the construction of the pond.

6.2 Air Quality Impacts

Applicant's Position

Odour

In the past, odours have been generated from the storage and irrigation of starch plant effluent on the Environmental Farm. Prior studies have indicated that this has been the major source of odours in the Bomaderry and surrounding areas with effluent application to moist ground resulting on effluent ponding and odour generation.

The Applicant is currently looking into various management measures that may reduce odour emissions from the Environmental Farm. The Applicant has committed \$34 M in the 2002/2003 financial year to upgrade its wastewater treatment facilities in an effort to reduce pollution and minimise odour impacts of their operation.

The applicant's position is that effluent storage ponds play a role in reducing odour potential by providing scope for the retention of effluent rather than dispersing it in times of wet weather. This reduces the irrigation areas becoming water logged and the potential ponding of effluent to occur.

The Applicant argues that odours from effluent stored in ponds are controlled by pH adjustment and de-odourisers situated along the tops of the pond walls.

For the purposes of this proposal the Applicant engaged Stephenson Environmental Management Australia (SEMA) and Holmes Air Sciences to conduct an odour impact assessment for the EIS.

EPA Odour performance criteria are presented in Table 1.

Table 1: EPA odour performance criteria

Population of affected community	Odour performance criterion (odour units (OU))
Urban area (>2000)	2.0
500 – 2000	3.0
125 – 500	4.0
30 – 125	5.0
10 – 30	6.0
Single Residence (<= 2)	7.0

Typically the residential properties adjacent to the Environmental Farm would tend to be on the odour performance criteria of 6.0 or 7.0 OU, where as the township of Bomaderry and Nowra would be more likely measured against the Odour Performance Criteria of 2.0 to 3.0 OU.

The odour impacts of the existing and proposed wet weather storage ponds at the Environmental Farm have been assessed using dispersion modelling and comparison of predicted results with the NSW EPA odour performance criteria for varying population densities (Table 1). The model predictions indicate that the existing ponds, if emitting at the current measures odour emission rates, would comply with the appropriate performance criteria. The addition of Pond No. 7 would increase the impacts if Pond No. 7 was used to store effluent with high levels of BOD. Under these circumstances the ponds would not comply with the air quality goal at the nearest residence.

The Applicant argues that Pond No. 7 would not be used on a continuous basis and would ultimately be used to store improved wastewater (solids free effluent). Provided the BOD levels are low, the Applicant argues that Pond No. 7 will emit odours that are substantially reduced from those experienced with the existing ponds.

Dust

During construction of pond No. 7, dust emissions would temporarily impact on air quality as a result of generation of dust by earthmoving activities and wind.

It is expected that the total dust generated from a 10 hour working day would be approximately 200 kg (more on a hot dry and windy day) without mitigative measures. Under worst case meteorological conditions, short-term dust impacts could exceed the 24-hour air quality standard for a distance of 150 m from the source.

The Applicant recognises that dust emissions from the site need to be mitigated and has nominated a number of measures to do this. The Applicant considers that with mitigation, predicted levels of particulate matter are not expected to exceed the ambient particulate matter less than 10 microns (PM10) annual and 24-hour, maximum air quality standards during construction.

Issues Raised in Submissions

Every submission from the community raised concern about excessive odour emissions from the Environmental Farm and concern that the proposal will exacerbate the problem. Four submissions stated that the odour prevented them undertaking outdoor activities such as gardening and entertaining, and one submission raised concern about health impacts of breathing polluted air.

The EPA General Terms of Approval provide that as continuous use of Pond No. 7 could result in exceedence of EPA odour criteria, the pond should only be used in emergency situations or for the storage of treated effluent following the implementation of the pollution reduction program proposed by the Applicant.

Department's Position

Odour

The odour impact assessment conducted by SEMA and Holmes Air Sciences has found that the existing ponds, if emitting odours at current measured odour emission rates, would comply with the EPA's odour performance criteria. However it also found that the pond system would not comply with the air quality goal at the nearest residence with continuous storage of high BOD effluent in Pond No. 7. There is therefore a need to prevent the use of Pond No. 7 for the storage of high BOD effluent, except in the event of an emergency.

There are currently no odour monitoring conditions in the EPL (or any requirement for an odour management plan). Whilst odour monitoring that is specific to Pond No. 7 is needed to validate the odour emission predictions in the EIS, such odour monitoring should form a component of a broader odour monitoring program for the full effluent storage and irrigation system, i.e., the environmental farm, to gauge the impacts of odour emissions on the receiving community. The results of this monitoring can be used to identify whether further odour mitigation measures are required, and as a baseline from which to gauge the odour performance of future development of the company's operation.

It is considered that odour monitoring should be a component of an integrated odour management plan for the company's effluent management operation. It is argued that Pond No. 7 shall be used for emergency storage only, subject to an emergency management plan required under the Instrument of Consent, should consent be granted, and that an odour management plan for the entire Shoalhaven Starches operation be addressed in the assessment of the DA for a Pollution Reduction Program (PRP No. 7) due to be lodged with the Department in December 2002.

It is recommended that, should consent be granted, the following condition be placed in the recommended instrument of consent:

Prior to the operation of Pond No. 7, an Emergency Effluent Storage Plan detailing the circumstances under which Pond No. 7 would be used for the storage of effluent with a BOD of greater than 1600mg/L be approved by the Director-General. The Plan must address, but not be limited to, the following issues:

- the capacity of the pond storage/irrigation system;
- contributing weather conditions;
- alternatives to pond storage;
- the quality of the effluent;
- the potential for the emission of offensive odours;
- community consultation; and
- pond emptying and clean-up procedures.

Dust

Given the localised and temporary nature of dust generation during the construction of Pond No. 7, the Department is satisfied that the dust minimisation measures prescribed in the EIS are adequate to protect local air quality during construction of Pond No. 7. Many of these measures however involve the use of water to suppress dust. Given the drought conditions that are currently being experienced in New South Wales, the department recommends that alternatives to the use

of town water for dust suppression activities be explored and the use of town water minimised. This has been included as a condition in the draft instrument of consent.

6.3 Flooding Impacts

The Applicant's Position

The Environmental Farm is located on a floodplain. Flooding within this area occurs initially as a breakout from the Shoalhaven River via Broughton Creek and an unnamed drain. The Shoalhaven floodplain has a history of significant flooding: floods considered to be of significant magnitude in the area during the past 20 years were recorded in August 1974, June 1975, October 1976, March 1978, April 1988 and August 1990. The largest recorded flood occurred in March 1978 and had a water level of 4.2 m AHD within the vicinity of the site.

The Applicant engaged Webb. McKeown & Associates Pty Ltd, to conduct the hydraulic, economic, social and environmental impacts of the proposal in relation to flooding. The study concluded that the development would result in changes to the flow of floodwaters and to the level of floodwaters in some areas of the floodplain. This has the potential to impact on the Paper Mill, and a number of residences surrounding the site. The most obvious impact of an increase in flood levels is an increase in economic damages due to a greater depth of inundation.

The study took into consideration the cumulative impacts on flood levels of all development on the floodplain since 1990. The incremental impact of Pond No. 7 is limited to approximately 1 cm in cells 23, 24 and 26 (refer Figure 3). The Applicant has stated that it is not possible to amend the design of the Pond to mitigate impacts of flooding and has therefore agreed it shall accept responsibility for any increased flood damages to properties as a result of the development, as predicted in the information submitted in support of the application, and would assist Council to implement flood education and flood warning systems in the area.

Issues Raised in Submissions

The Department of Land and Water Conservation expressed concern that as Pond No. 7 would have adverse impacts on flooding it would create a direct and increased potential liability for those affected by increased flood damages and that this liability is shared with the consent authority.

The Department also noted that the EIS does not provide a strategy to mitigate impacts and that options recommended previously such as raising the developments potentially exposed to increased flood damages and monetary solutions have not been explored in the EIS.

The Department states in its submission that the Applicant should take responsibility for any increases in flood damages and should assist Council in the implementation of flood awareness and preparedness measures outlined in the Lower Shoalhaven Flood Management Plan.

The Department's Position

The Department accepts that the hydraulic impacts resulting from the construction of Pond No. 7 cannot be negated and agrees that flood levels would be affected as a result.

To determine the incremental effect on food levels resulting from the construction of Pond No. 7, the Department requested further information from the Applicant separating Pond No. 7 impacts from the cumulative impacts of all development of the floodplain since 1990. The Applicant duly supplied this information which indicated that the incremental impact of Pond No. 7 is limited to approximately 1 cm in the area represented by cells 23, 24 and 26 in Figure 3.

Incremental impact of Pond No. 7 on flood levels

It is recommended that, should approval be granted, the following conditions be included in the recommended instrument of consent:

- that Pond No. 7 be constructed to geotechnical standards that would ensure the structural stability of Pond No. 7;
- that the Applicant shall accept responsibility for any increased flood damages to properties as a result of the development, having regard to flood impacts resulting from the development predicted in the information submitted in support of the application. Tangible damages identified in any compensation agreement arising from this condition should amount to no less than the quantitative assessment if the increase in tangible flood damages presented in the EIS.

The Department also believes that the Applicant should ultimately accept responsibility for compensating damage incurred as a result of cumulative increases in flood levels caused by all its works within the floodplain. The Department has agreed that the most appropriate place to address an overall flood management/compensation strategy is during the assessment of the Development Application for a Pollution Reduction Program (PRP No. 7) due to be lodged with the Department in December 2002. It is noted however that the assessment of the PRP No. 7 Development Application cannot be controlled under this consent.

6.4 Water Quality Impacts

Applicant's Position

Surface Water

Rainfall runoff from the Environmental Farm paddock is directed into agricultural drains situated along the Bolong Road frontage of the site and to the north east of the existing Pond No. 6. A small swale directs runoff along the eastern edge of Pond No. 5 to the open drain adjacent to Pond No. 6. From here the water flows into shallow drains with controlled entry points, leading into flood mitigation drains. These drains in turn flow into Broughton Creek and the Pacific Ocean at Shoalhaven heads, or through the Crookhaven River via Berry's canal when the River opening at Shoalhaven heads is closed.

The major potential cause of surface water pollution on the Environmental Farm is overtopping of the ponds during periods of prolonged wet weather. Therefore the Applicant lodged the Pond No. 7 DA with the Department to ensure that the effluent storage capacity would provide a significantly greater margin of safety to prevent pollution of surface water.

Pollution of surface water could also be caused by overtopping of Pond No. 7 walls during flood conditions. The Applicant has therefore designed the pond with a wall height that is unlikely to be overtopped in any flood, including the extreme flood events.

Groundwater

The Applicant expects that groundwater occurs at approximately 3 m below the proposed pond site and flows in a north easterly direction toward Broughton Creek, although some flow to the south toward the Shoalhaven River may be possible. The extent of seasonal fluctuations in groundwater level is unknown.

Given the proposal involves a maximum excavation of 5.7 m below the natural ground surface, there is potential for the earthworks to intercept groundwater. Based on the construction of Ponds No. 5 and 6 which involved similar excavation depths, Coffey Geosciences Pty Ltd have recommended various construction methods in their report that supports the EIS to manage groundwater seepage during construction.

Pollution of groundwater would result from exfiltration of effluent from Pond No. 7 during operation. The Applicant has committed to lining the walls and base of the pond with clay material of permeability of less than 10^{-9} m/s.

Issues Raised in Submissions

The EPA General Terms of Approval state that the proposed development must not result in the pollution of surface water or groundwater except as specified in the EPL for the premises.

The Department's Position

The Department supports measures identified by the Applicant to prevent the pollution of surface and groundwater as a result of the development of Pond No. 7.

Conditions included in the recommended instrument of consent include:

- construction of the pond walls to 7 m AHD, a height unlikely to be overtopped by floodwaters, including during extreme flood events;
- implementation of construction methods recommended in the Coffee Geosciences report contained in the Appendices to the EIS
- lining of the pond base and walls with impervious material to prevent infiltration to and exfiltration from the pond in conjunction with the installation of a groundwater monitoring system to monitor potential groundwater pollution.

6.5 Visual Impacts

Applicant's Position

The Environmental Farm is located on Bolong Road, one of the main gateway entrances to the Nowra/Bomaderry urban areas and is a significant tourist route along this section of the South Coast of New South Wales. The Environmental Farm is typical of the surrounding rural area with flat to gently undulating land planted with pasture grasses.

The environmental Farm includes storage ponds and associated effluent treatment facilities. These storage ponds are visible from Bolong Road, already reducing visual amenity in the area.

The proposed pond would be visible from the following locations:

- Bolong Road along the immediate frontages of the site, particularly for vehicles travelling east to west;
- residences to the north and the east of the site;
- on roads heading west to Nowra as they approach the site

The applicant argues that the existing ponds are already visible from these vantage points and that as the proposed pond would be of similar scale and nature to the existing ponds, it would not appear out of context and would therefore have minimal impact.

The applicant has agrees to take measures to reduce the visual impact of the pond, such as sowing the walls of the pond with pasture and screening the site with vegetation buffers.

Issues Raised in Submissions

Nil

Department's Position

The Department concurs with the Applicant that the proposed development is likely to have limited visual impact on the surrounding area. Existing screening vegetation along Hannigan's Lane has successfully screened much of the development from views along this road.

The Department supports the protection of existing vegetation on the site and recommends additional planting of screening vegetation along the Bolong Road frontage of the site and the eastern boundary adjacent to the Walsh property and any other property that may be visually affected by the proposed development prior to the commencement of construction work.

6.6 Traffic Impacts

Applicant's Position

Traffic

Christopher Stapleton Consulting Pty Ltd commissioned a series of traffic counts along primary heavy vehicle routes to and from the Applicant's operations in Bolong Road. The results show that:

- the average weekday combined traffic volumes for Bolong Road within the vicinity of Hannigan's Lane (i.e. east of the Applicant's factory site) is 9,323 of which 6.3% comprises heavy vehicles;
- the AM peak contained 664 vehicles and the PM peak 762 vehicles;
- articulated heavy vehicles make up 2% of the weekday daily flow;
- heavy vehicles make up 11% of the weekday daily flow in Meroo Road and 9% of the weekday daily flow in Cambewarra Road;
- articulated vehicles make up 3% of the weekday daily flow in Meroo Road and 1% of the weekday daily flow in Cambewarra Road; and
- an average of 11 b-doubles use the local route via Meroo Road daily, an average of one b-double uses the local route via Cambewarra Road daily.

Heavy vehicle trips utilise the following routes:

- via Bolong Road, Railway Street, Cambewarra Road and Meroo Road to the Princes Highway;
- via Bolong Road and the Princes Highway

Workforce vehicles would distribute to the general area via all available routes.

The two key intersections that would be potentially impacted by the proposal are the intersections of:

- Bolong Road and the Princes Highway; and
- Bolong Road and Railway Street.

The peak hour performance of these intersections is shown in Table 2. From these results shown in Table 2, the Applicant notes that all intersections are currently operating at either very good or good levels of service.

Table 2. Local Intersection performance

Intersection	Level of Service	Average Delay	Degree Saturation
Bolong Rd and Railway St	A	4 seconds	0.30
Bolong Rd and Princes Highway	B	21 seconds	0.75

Proposed development

Predicted impacts on intersection performance as a result of the proposal are shown in Table 3.

Table 3. Local Intersection performance during construction of proposed Pond No. 7

Intersection	Level of Service	Average Delay	Degree Saturation
Bolong Rd and Railway St	A	5 seconds	0.33
Bolong Rd and Princes Highway	B	23 seconds	0.77

Traffic impacts would be limited to the construction period. The Applicant estimates that the total daily car/light vehicle traffic would include employee traffic (10 in, 10 out) plus totalling 20 movements a day. The Applicant expects that there would be a maximum of six daily truck movements (3 in, 3 out) consisting of incoming and outgoing plant and equipment deliveries.

The Applicant states that the access to the site would be from Hannigan's Lane, a bitumen sealed two way rural road with a speed limit of 100 km per hour. The site access road is an all weather gravel access, widened to permit heavy vehicle movements to and from the site.

No operational traffic would be generated as a result of the proposal.

Issues Raised in Submissions

Nil

Department's Position*Traffic Generation*

The amount of traffic that would be generated by the proposal is minimal. The Department is satisfied that the local road network would not be significantly affected by construction traffic but recommends that truck movements are undertaken, where practicable, outside peak hour and that the utilisation of the Bolong Road and Railway Street intersection is maximised (in order to minimise use of the Bolong Road/ Princes Highway intersection).

6.7 Acid Sulfate Soil Impacts**Applicant's Position**

The Applicant has undertaken a series of studies with regard to the potential for presence of Acid Sulfate Soils on the Site. These reports concluded that acid sulfate soils are present on the site and therefore need to be managed.

The Applicant has undertaken to prepare an acid sulfate soil management plan in accordance with current guidelines and to engage an experienced and appropriately qualified expert to monitor excavation.

Potential acid sulfate soils would be stockpiled in a separate, bunded area and monitored, tested and treated as required. Treatment is likely to comprise treatment with lime.

Issues Raised in Submissions

The Department of Land and Water Conservation (DLWC) stated that an Acid Sulfate Soil Management Plan should be prepared and implemented and should include the following issues:

- Stockpiling of potential acid sulfate soils away from flow lines within the floodplain;
- Adequacy of bund capacity
- Monitoring and treatment of acidic water within bund areas
- Testing, monitoring and treatment of water seeping into the pond during construction.

The DLWC supports on-site monitoring by a trained expert for the presence of acid sulfate soils.

Department's Position

The Department is satisfied that preparation and implementation of an Acid Sulfate Soil Management Plan in accordance with current guidelines, and compliance with this management plan, would adequately mitigate any risks associated with the handling of acid sulfate soils. The Department supports on-site monitoring by a trained expert for the presence of acid sulfate soils. Both these requirements are included as a recommended condition should approval be granted.

6.8 Waste Impacts

Applicant's Position

Waste Management was not addressed in the EIS

Issues Raised in Submissions

Nil

Department's Position

The Department considers that the preparation and implementation of a waste management plan as part of the construction and operation Environmental Management Plans would adequately address waste generated as a result of the proposal, principally to minimise waste generation and manage any waste appropriately. This is included as a recommended condition should approval be granted.

6.9 Flora and Fauna Impacts

Applicant's Position

The Environmental Farm has a long history of agricultural disturbance and is essentially cleared and used for beef cattle grazing. The dominant pasture is kikuyu, with rye grass in the laser leveller centre irrigation paddocks. Isolated stands of trees occur within the farm and consist of Melaleuca, acacia, casuarinas and eucalypts. The Environmental Farm offers very little in terms of habitat value.

The Applicant states that no threatened flora or fauna species, populations or endangered ecological communities would be impacted by the proposal.

Development of Pond No. 7 would disturb existing pasture and require the removal of one tree. No native vegetation would be removed as a result of the proposal.

Issues Raised in Submissions

Nil

Department's Position

Given the highly disturbed nature of the site and the fact that no habitat would be removed the Department is satisfied that no flora and fauna surveys were required and that the development would not have a significant impact on and flora or fauna species, populations or ecological community.

6.10 Agricultural Land

Applicant's Position

The Environmental Farm is classified as predominantly Class 3 land under the NSW Agriculture Land Classification mapping and is classed by the IREP as "Prime Crop and Pasture Land". The Farm is used for spray irrigation using effluent from the Shoalhaven Starches operation and grazing.

The Applicant states that over the years it has implemented an agricultural management programme to maximise the treatment capacity of the irrigation area in an environmentally sensitive manner.

The Applicant states that although the proposed pond would cover an area of 4.7 ha of existing pasture, this only comprises 0.5% of the overall area of the Farm and would not cause a reduction in agricultural capability of the land. The Applicant also states that the proposed Pond No, 7 would minimise the need to irrigate the farm during periods of wet weather which would consequently improve the agricultural capability of the irrigated area.

Issues raised in Submissions

Nil

The Department's Position

In order to maximise the agricultural productivity of the land included within the Environmental Farm, the Department recommends that the Agricultural Management Program for the Farm shall be reviewed in consultation with NSW Agriculture. It is however thought that this would be more appropriately addressed in the assessment of the DA for the proposed Pollution Reduction Program (PRP NO. 7) due to be lodged with the Department in December 2002 and has therefore not been included as a condition in the recommended instrument of consent.

6.11 Hazards and Risk Impacts

Applicant's Position

The Applicant has not addressed hazard and risk in its environmental impact assessment of the proposal.

Issues Raised in Submissions

Nil

Department's Position

The Department notes recommendations made by the Dam safety Committee in documentation supporting the EIS and the presence of public utility and service infrastructure in the vicinity of the development.

The Department recommends that should approval be granted, the following conditions be included in the instrument of consent:

- that the Dam Safety Committee shall be notified of any future development downstream of any of the effluent storage ponds on the environmental farm site that may upgrade the "Consequence" category of the development; and
- measures to protect public utility and service infrastructure from damage, including high voltage power lines and fiberoptic cables, and to ensure safety of construction workers shall be developed in consultation with the relevant service provider.

6.12 Heritage Impacts

Applicant's Position

The Applicant states that no items of Aboriginal or European Heritage would be impacted by the proposal. This is based on a search of the Aboriginal Sites Register held by the National Parks and Wildlife Service, the heritage schedules of the Shoalhaven Local Environmental Plan and the Illawarra regional Environmental Plan No. 1 and the National Trust Register which revealed no known sites of heritage significance.

Council's recently completed heritage study identifies an item of environmental heritage on the Environmental farm, on Lot 23 DP 311233 (refer to Figure 1). The item is a weatherboard and iron farm house that is located adjacent to Hannigan's Lane approximately 1.5 km from the proposed site and the intersection of Hannigan's Lane with Bolong Road.

Issues Raised in Submissions

Nil

Department's Position

The Department requested a map with the location of the heritage cottage indicated to ensure it would not be impacted by the proposed development. This was supplied by the Applicant. The cottage is located at the "dead" end of Hannigan's Lane and the Department is satisfied that the cottage would not be impacted by the proposed development.

The Department conducted searches of the NSW heritage inventory and the Register of the National Estate, which were omitted from the Applicant's assessment. No items of heritage significance, Aboriginal or European were identified.

7. SECTION 79C CONSIDERATION

Section 79C of the *Environmental Planning and Assessment Act 1979* sets out matters that a consent authority must take into consideration when determining a development application. The Department has assessed the development application in the context of Section 79C of the Act, having regard to the identified heads of consideration. This consideration is provided in Appendix A. The Department is satisfied that the merits of the proposed development warrant approval subject to the conditions recommended in the recommended instrument of consent.

8. RECOMMENDED CONDITIONS OF CONSENT

Should the Minister determine to approve the development application, the Department recommends that a number of conditions be included with the aim of controlling and monitoring the future environmental performance of Pond No. 7. The recommended conditions take into account the issues raised in submissions from the EPA, DLWC and the public and are documented in Schedule 2 of the instrument of consent (tagged "C").

The EPA, the Applicant and the Department are satisfied with the draft instrument of consent and the scope and intent of the conditions. The Department considers that the recommended instrument of consent would mitigate the environmental impacts of the proposal to an appropriate and acceptable level should approval be granted.

9. CONCLUSIONS

The Department of Planning considers that the proposed development is consistent with State, regional and local planning objectives. The development application accords with the objectives and provisions of relevant environmental planning instruments.

The Department considers that all key environmental concerns have now been adequately addressed. It is recommended that the development application be approved subject to the conditions of the recommended instrument of consent. Conditions have been formulated to manage, monitor and mitigate potential environmental impacts.

10. RECOMMENDATIONS

It is RECOMMENDED that the Minister:

- (i) consider the findings and recommendations of the Department's Assessment Report for DA No. 265-8-2002 (this document, tagged "D");
- (ii) grant consent to development application No. DA-265-8-2002, as submitted by Shoalhaven Starches Pty Ltd, subject to the conditions set out in Schedule 2 of the instrument of consent (tagged "C"); and
- (iii) sign the instrument of consent (tagged "C");

Miriam Mathew
Senior Environmental Planning Officer
Major Development Assessment

ENDORSED:

Sam Haddad
Executive Director
Sustainable Development

APPENDIX A - CONSIDERATION UNDER SECTION 79C

Section 79C requires that the consent authority, when determining a development application, takes into consideration the following matters.

The provisions of:

(i) any environmental planning instrument;

In relation to the proposed Pond No. 7, the following environmental planning instruments apply.

- *Illawarra Regional Environmental Plan No. 1.*

Consideration of the provisions of this instrument, in the context of the proposed development is outlined in section 4.4 and in Appendix B of this report.

(ii) any draft environmental planning instrument that is or has been placed on public exhibition and details of which have been notified to the consent authority;

There are no draft environmental planning instruments relating to the development.

(iii) any development control plan;

There are no development control plans (DCP) that apply to the proposed development:

(iv) any matters prescribed by the regulations that apply to the land to which the development application relates;

Clause 92 of the *Environmental Planning and Assessment Regulation 2000* requires the following matters to be taken into consideration by a consent authority in determining an application:

- *The Government Coastal Policy (where relevant);*

The Government Coastal Policy applies to development in the Shoalhaven local government area. The proposed Pond No. 7 development is generally consistent with the provisions of the policy and aims to minimise risk of pollution of surface water that flows into the Pacific Ocean.

- *In the case of a DA for the demolition of a building, the provisions of Australian Standard AS 2601-1991: The demolition of structures, as in force 1 July 1993*

No buildings would be demolished for the proposed development.

the likely impacts of that development, including environmental impacts on the natural and built environments, and social and economic impacts in the locality;

Section 6 considers the environmental impacts of the proposed development in detail. The Department is satisfied that, should approval be granted, all environmental impacts can be appropriately managed and mitigated through conditions of consent.

the suitability of the site for the development;

The proposed development is located within the Shoalhaven local government area. Under the *Shoalhaven Local Environmental Plan, 1985* (LEP) the proposed Project area is zoned 1(g) (Rural "G" (Flood Liable)). The Applicant advises that the Proposal is consistent with the objectives of the LEP and of Zone No. 1(g) (Rural "G" (Flood Liable)) and is permissible with development consent. The Department is satisfied that the Proposal is permissible and

consistent with LEP and zone objectives and that the site is therefore suitable for the proposed development.

any submissions made in accordance with this Act or the regulations;

A total of seven submissions were made in response to the exhibition of the development application for the proposed Effluent Storage Pond No. 7. All matters raised in these submissions have been given due consideration, as summarised in section 6 and in detail in Appendix C.

the public interest;

The proposed development would have overall benefits both environmentally and socially as it would minimise the risk of overtopping of the ponds and pollution of surface water during prolonged periods of wet weather. Continuous use of the pond for storage of untreated effluent could increase odour emissions to a level where they may exceed EPA odour criteria, but conditions included in any Instrument of Consent would restrict the use of the Pond to minimise odour impacts. Restrictions on pond usage include storage of effluent with a BOD of not more than 1600, except in emergency situations in compliance with pre-approved protocols.

If the Development Application is approved, the Instrument of Consent would impose a suite of controls, which the Department considers would mitigate for any environmental impacts of the proposal. It is therefore considered that the proposal would be in the public's interest.

APPENDIX B - PROVISIONS OF ENVIRONMENTAL PLANNING INSTRUMENTS

Following are considerations of the proposed Pond No. 7 in the context of the objectives and provisions of relevant environmental planning instruments.

Illawarra Regional Environmental Plan No. 1

Aims of the Policy

Illawarra Regional Environmental Plan No 1 aims to maximise the opportunities for the people of the region and the State to meet their individual and community economic and social needs with particular reference to the way in which these needs are related to the allocation, availability, accessibility and management of the region's land resources by:

- a) identifying regional planning issues and provisions applicable or potentially applicable:
 - to actual development which may be carried out on land within the region, and
 - to the overall planning of the region consistent with the policies for draft local environmental plan preparation specified in Part 2B16,
- b) advising Government, public authorities and other persons in determining the way in which they may:
 - manage their land resources,
 - exercise their functions,
 - order their priorities and allocation of their funds in relation to the planning of the region, having regard to the principles specified in Parts 2B16, and
 - establishing parameters and controls relating to development, particularly as they relate to the environmental quality and social well-being of residents of the region.

Much of purpose of the IREP is to guide development of local environmental Plans in relation to development and therefore much of the plan is irrelevant to the assessment of the Pond No. 7 DA. There are a number of objectives however that are relevant in that they relate to rural lands, industry, waste and coastal lands. These objectives are addressed below.

Objectives relating to extractive materials, coal, energy, living areas, commercial centres, transport and service corridors, ports and harbours, the escarpment, recreation and tourism, environmental heritage and the interest and coordination of other public authorities have not been addressed as they are not relevant to the proposed development.

The objectives relating to rural lands are:

- ***to retain the productive capacity of prime crop and pasture lands,***
The proposal would reduce the need to irrigate during wet weather which should improve the productive capacity of agricultural land comprising the Environmental Farm.
- ***to protect valuable natural environments,***
The proposal would minimise the risk of overtopping of the existing effluent storage ponds during periods of prolonged wet weather. Therefore, the proposal would serve to protect the local environment from surface water pollution.
- ***to provide for wildlife movement between major protected wildlife habitats,***
Not relevant.

- ***to effectively manage the development of rural lands having regard to flood potential, bushfire risks, salinisation, soil degradation, erosion and weed infestation,***

Provided all conditions in the recommended Instrument of Consent are implemented, flood potential, soil degradation and erosion would be effectively managed. Bushfire risk, salinisation and weed infestation are not directly relevant to this proposal.

- ***to allow for the development of small rural holdings in appropriate locations,***

Not relevant.

- ***to prevent uneconomic demand for State Government services,***

Not relevant.

- ***to allow for future urban expansion,***

Not relevant.

- ***to retain the scenic attributes of rural areas,***

Provided all conditions in the recommended Instrument of Consent relating to visual amenity are implemented, the scenic quality of the area would be improved through the screening of the pond site which is currently visible from Bolong Road, a major tourist route into Nowra and Bomaderry.

- ***to provide for developments which by virtue of their character require siting away from urban areas.***

Not relevant.

The objectives relating to industry are:

- ***to ensure that there is sufficient industrially zoned land to meet industrial requirements,***

Not relevant.

- ***to encourage industries and other enterprises to locate within the region to diversify the economic base or act as stimuli to the local economy or both, and so provide new employment opportunities,***

Not relevant.

- ***to locate industrial land where it will meet the particular requirements of industry while having a minimal adverse impact on the natural environment and the amenity of living areas.***

Not relevant.

The objectives relating to waste disposal are:

- ***to dispose of waste materials in a manner which positively contributes to the environment or does least environmental harm,***

Following construction of Pond No. 7, the effluent from the Applicants operation would continue to be irrigated onto the Environmental Farm.

- ***encourage the most efficient use of resources by recycling or alternative use.***

The proposal would reduce the need to irrigate during wet weather which should improve the productive capacity of agricultural land comprising the Environmental Farm.

The objectives relating to coastal lands, wetlands and other water bodies are:

- ***to protect beach systems and conserve their scenic, recreation and natural values,***

The proposal would prevent overtopping of the existing storage ponds in an emergency situation and would prevent pollution of surface water that ultimately drains to the Pacific Ocean.

- ***to maintain and improve public access to waterways, lakes and the sea front,***
Not relevant
- ***to protect the productive ecosystems and natural habitats of the region's estuaries, wetlands, lakes and lagoons and their scenic attributes.***

The proposal would minimise the risk of overtopping of the existing storage ponds in an emergency situation affording increased protection of surface water that could impact on the water quality in Broughton Creek, the Shoalhaven River and a nearby SEPP 14 wetland.

APPENDIX C - SUMMARY OF SUBMISSIONS

No.	Organisation/Name	Position	Issues
1	Public Submitter	Object	- regularly affected by odours from the Manildra works - odours range from perceptible to offensively obnoxious - often cannot go outside to garden, BBQ or entertain or dry laundry outside - request no further extension of the Shoalhaven Starches operation - ponds should be storage ponds, not evaporation ponds.
2	Public Submitter	Did not state	- Bomaderry suffers from odour, especially during summer and north-east breezes - concerned Pond No. 7 will increase smell as given the large surface area the wind will be able to pick up the odour - night time noise from the Shoalhaven Starches factory is a concern and disturbance to the community should be taken into consideration
3	Public Submitter	Object	- odour from the ponds is so bad windows and doors need to be kept closed - does not want more odour
4	Public Submitter	Object	- Shoalhaven Starches has been impacting on Bomaderry in terms of odour for 10 to 15 years and Shoalhaven City Council and the EPA have done nothing about it - if the new pond doesn't address odour problems it should be rejected - the company should be made to rectify the odour problem so Bomaderry residents can breath clean air
5	Public Submitter	Object	- petition signed by 15 residents - disappointed that Shoalhaven City Council appears to be supporting Shoalhaven Starches plans to expand/double its present operation - offensive odours from irrigated effluent renders quality of life unbearable - entertaining outside is not possible - it is against the law to allow offensive odours to pollute beyond boundaries - the water should be recycled back through the plant - a condition of any plant expansion should be that they eliminate offensive effluent from the system - fear health effects of exposure to caustic odours.
6	Environment Protection Authority	Did not state	- the proposed pons must not pollute surface or groundwater except in accordance with the EPL for the premises - the pond must be constructed with impermeable base and walls - construction activities shall be limited to times set out in the EPA Noise Control Manual - the pond must be constructed in accordance with a geotechnical design - disturbed soils must be checked for acid sulfate soils - the pond must be used in emergency situation only to minimise risk of exceeding EPA odour criteria – following implementation of the proposed pollution reduction program, the pond may be used to store treated effluent only. - environmental management, monitoring and emergency response plans must be prepared for issues of interest to the EPA

No.	Organisation/Name	Position	Issues
7	Department of Land and Water Conservation	Did not state	Floodplain Management - Pond 7 will have adverse impacts on flooding which create a direct and increased potential liability for those affected by increased flood damages. This liability is shared with the consent authority. - The EIS does not provide a strategy to mitigate impacts - options recommended previously such as raising the developments potentially exposed to increased flood damages and monetary solutions have not been explored in the EIS. Options should include a written agreement between affected landowners and the proponent making clear acceptance of the increase in flood risk. The proponent should assist Council in the implementation of flood awareness and preparedness measures outlined in the Lower Shoalhaven Flood Management Plan, but as Council has to implement this anyway it will not remove liability for flood damages from the consent authority. Soil Management - to ensure the pond will have stable batters, sufficient topsoil should be respread over the heavier clay material to prevent excessive scouring - soil samples from test bores should be tested for soil dispersibility to ascertain soil stability. - A qualified person should be onsite during excavation to observe for jarosite staining. - And acid sulfate soil management plan should be prepared.