

ASSESSMENT REPORT

Shoalhaven Starches Ethanol Expansion Project Relocation of Starch Dryer No. 5 Section 75W Modification - MP 06_0228 MOD 7

1. BACKGROUND

This report assesses a modification application by Shoalhaven Starches Pty Ltd (the Proponent) to relocate the approved Starch Dryer No.5 on its factory site.

The Proponent operates a factory off Bolong Road, immediately east of Bomaderry in the Shoalhaven local government area (see **Figure 1**). The factory has operated since 1979.

The factory processes wheat and grain transported by rail from central NSW to produce starch, gluten, ethanol and other related products for the food, beverage, confectionary, paper and motor transport industries. The wastewater from the factory is treated and irrigated on a nearby 'environmental farm' also owned by the Proponent and covering over 1,000 hectares (ha) which is located to the north of the factory (see **Figure 1**).

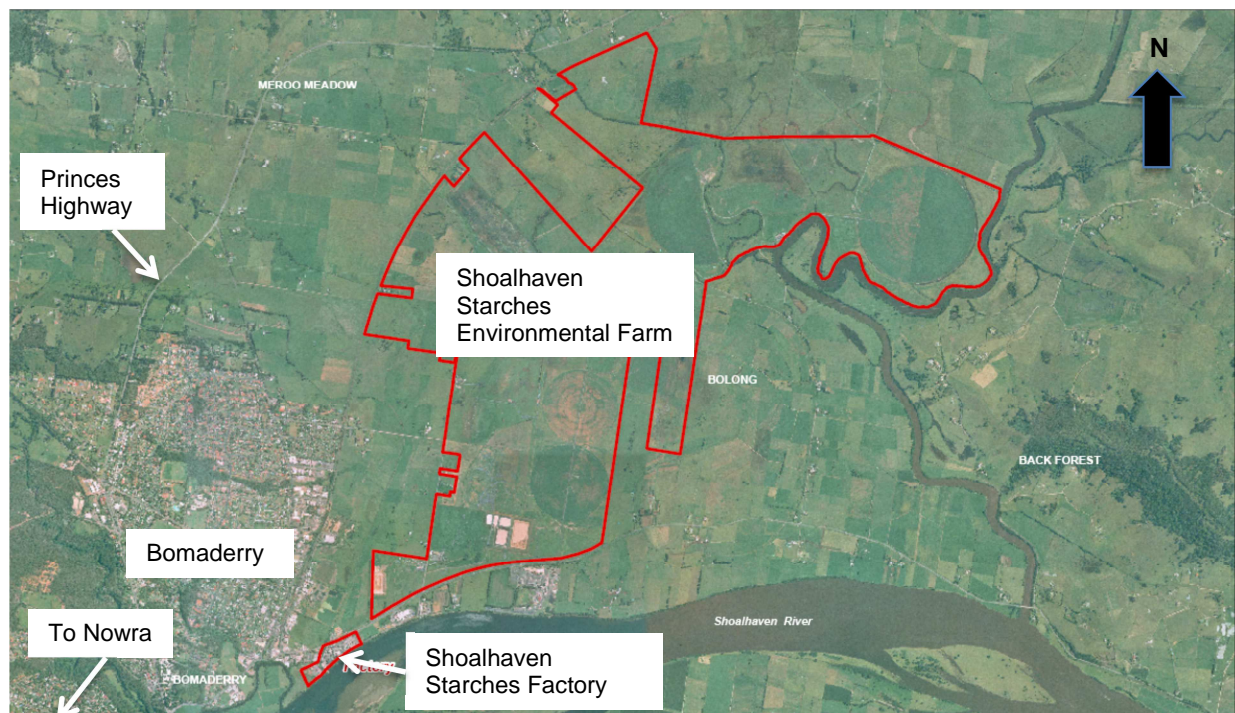


Figure 1 - Shoalhaven Starches factory and environmental farm near Bomaderry

The factory and environmental farm are located on the eastern fringe of Bomaderry on the northern bank of the Shoalhaven River. The factory is located 2 kilometres (km) to the north-east of the township of Nowra. Primarily industrial uses are located adjacent to the factory, including a metal fabrication factory, meat packaging works and a paper mill. The

Shoalhaven City Council sewage treatment works is located 180 metres (m) to the north of the factory. Bomaderry railway station is located 300m to the north-west with a private rail spur line crossing Bolong Road into the factory site. The nearest residences in Bomaderry are located approximately 500m to the west of the factory and environmental farm. The environmental farm extends across 1,000ha of the northern floodplain of the Shoalhaven River and contains the wastewater treatment plant, wet weather storage ponds and an irrigation system for managing wastewater from the factory.

In January 2009, the then Minister for Planning approved the Shoalhaven Starches Ethanol Expansion Project (06_0228) under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The expansion project involved staged production increases of ethanol following the successful implementation of a range of odour controls. The expansion project involved:

- implementation of mandatory odour controls; and
- construction of additional infrastructure to enable an increase in ethanol production from 126 megalitres a year (ML/yr) to 300ML/yr (see **Figure 2**).

By June 2012, Shoalhaven Starches had installed the mandatory odour controls including the installation of a wastewater treatment plant and a biofilter. In June 2012, in accordance with the project approval the Department approved the increase in ethanol production to the maximum volume permitted being 300 megalitres per year (ML/yr).

To date, Shoalhaven Starches has installed only some of the approved infrastructure for the expansion project as demand for ethanol has not increased as predicted. Shoalhaven Starches reported ethanol production levels in 2014 in the order of 230ML/yr. Notwithstanding, Shoalhaven Starches have implemented the mandatory odour controls and carried out quarterly odour monitoring and annual odour audits as required by the project approval.

Given that the demand for ethanol has not increased as predicted, Shoalhaven Starches is progressively installing approved components of the ethanol expansion project that will allow them to optimise the production of other products including starch and gluten. Shoalhaven Starches now propose to install an additional starch dryer (No. 5), which was approved by the former Minister for Planning in 2003 (DA 223-7-2002), and was subsequently consolidated into the 2009 expansion project approval.

It was originally proposed to install the additional starch dryer within the existing building housing the other starch dryers. The approved location for Starch Dryer No. 5 is shown on **Figure 2**. However, following detailed engineering design, Shoalhaven Starches has identified that the approved footprint for the starch dryer is insufficient and therefore an alternative location within the factory site is now proposed.

2. PROPOSED MODIFICATION

On 6 November 2015, Shoalhaven Starches lodged a modification application under Section 75W of the EP&A Act to modify the ethanol expansion project to relocate the approved Starch Dryer No. 5 onto the 'Moorehouse' site. The modification is described in full in the Environmental Assessment (EA) included in Appendix B, is illustrated on **Figure 3** and involves:

- relocating the starch dryer from the approved location on the eastern side of Abernathy's Creek (see **Figure 2**) to the western side of Abernathy's creek on the 'Moorehouse' site (see **Figure 4**);
- increasing the size of the approved starch dryer from 255 square metres (m²) to 3,000m²;
- extending the existing gantry (pipe bridge) to connect to the relocated starch dryer. The gantry is located at ground level and is 2.5m high and 1.5m wide. The gantry contains pipes for the supply of materials to the dryer including water, liquid starch and power. It also contains pipes for the transfer of effluent and waste water back to the factory; and
- a substation to supply power to the starch dryer. The substation would be housed within a concrete structure under the existing awning of the adjacent interim packing plant.

The dryer would cover an area of 50 metres (m) by 60m and have a height above ground level of 28m. A dryer stack would extend above the roof to a total height of 33.46m and dryer ducting would extend above the roof to a total height of 36m (see **Figure 3**). The dryer building would be constructed of Colorbond metal cladding.

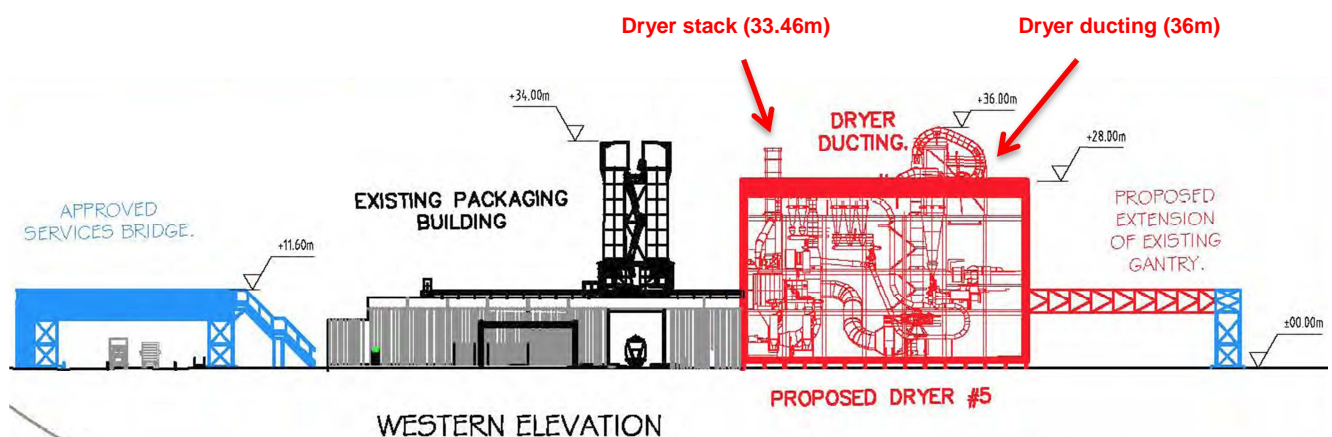


Figure 3 – Elevation of starch dryer compared to existing factory buildings

The starch dryer would be constructed following demolition of an existing industrial building on the Moorehouse site, which was subject to a separate modification application (MOD 6) approved by the Planning Assessment Commission, as delegate of the Minister, on 25 November 2015.

The starch dryer would be constructed in two stages. The first stage involves pouring the concrete slab and erecting the building. During this period, 30 staff car parking spaces would be relocated to a temporary car park on the northern side of Bolong Road (approved by MOD 6), as the area would be required for the temporary storage of construction materials. Following completion of stage 1, the car parking would be reinstated around the starch dryer building and the temporary car park on the northern side of Bolong Road would be removed.

Stage 2 construction works involve internal fit-out of the building with the starch dryer equipment. The total works are expected to take two months to complete and would require a construction workforce of 30.

No change is proposed to the approved starch, gluten, glucose or ethanol production rates at the factory or to the volume of wastewater generated and treated on the environmental farm.

3. STATUTORY CONTEXT

Approval Authority

The Minister was the approval authority for the original project application, and is consequently the approval authority for this application.

However, as reportable political donations were made by the Proponent, the application will be determined by the Planning Assessment Commission (the Commission) in accordance with the Minister's Instrument of Delegation, dated 14 September 2011.

Section 75W

In accordance with Clause 12 of Schedule 6A of the EP&A Act, Section 75W of the Act as in force immediately before its repeal on 1 October 2011 and as modified by Schedule 6A, continues to apply to transitional Part 3A projects.

Under Section 75W of the EP&A Act, the Minister is obliged to be satisfied that what is proposed is indeed a modification of the original proposal, rather than being a new project in its own right.

The Department notes that:

- the primary function and purpose of the approved project would not change as a result of the proposed modification;
- the modification is of a scale that warrants the use of Section 75W of the EP&A Act;
- the approved production rates of the project would remain unchanged as a result of the proposed modification; and
- any potential environmental impacts would be minimal and appropriately managed through the existing or modified conditions of approval.

Therefore, it is considered that the proposed modification is within the scope of Section 75W of the EP&A Act. Consequently, the Department considers that the application should be assessed and determined under Section 75W of the EP&A Act rather than requiring a new development or project application to be lodged.

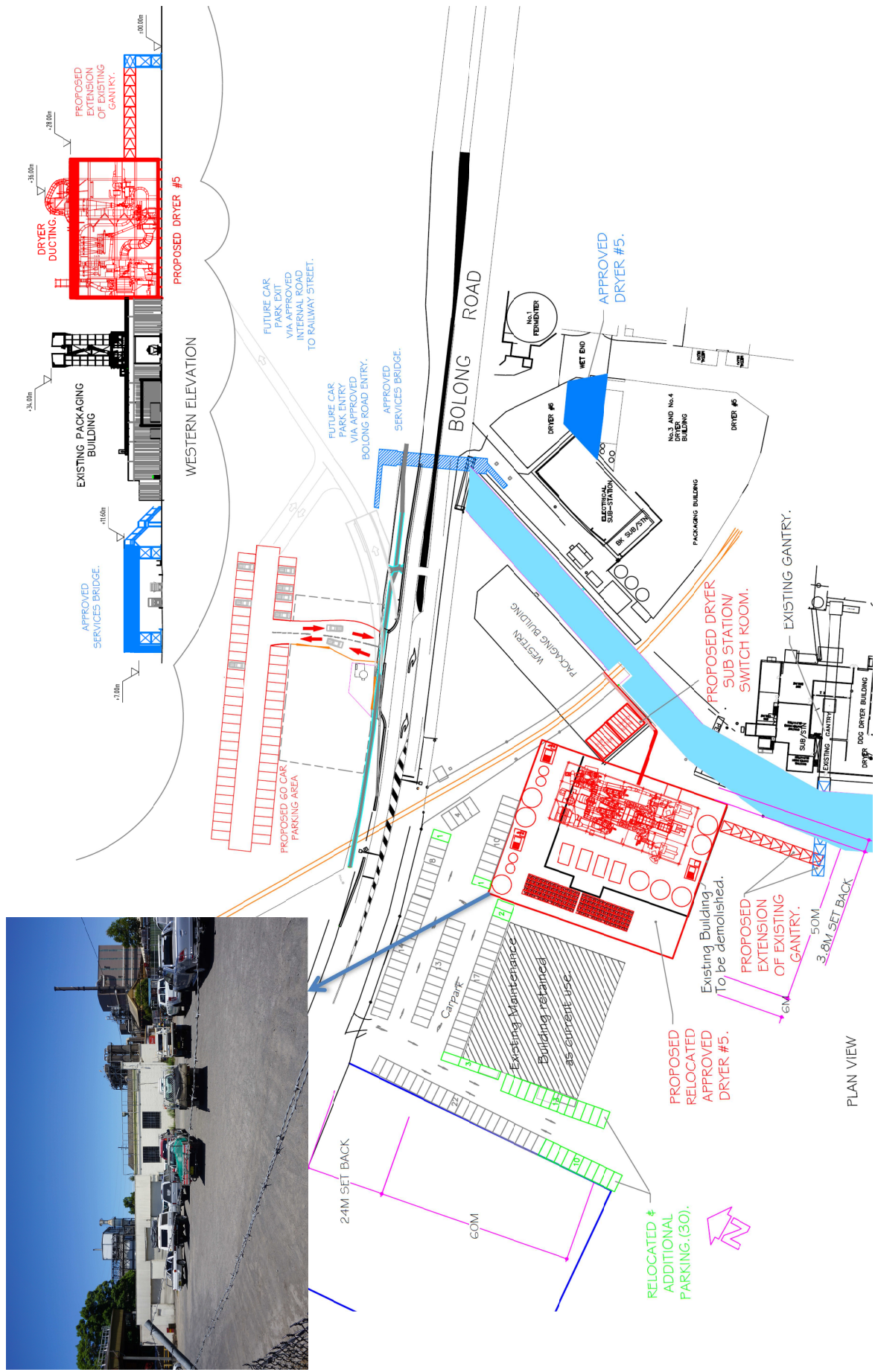


Figure 4 – Relocated Starch Dryer No. 5, Gantry Extension and Sub Station
 (Inset photo shows the proposed location for the relocated starch dryer)

4. CONSULTATION

Under Section 75W of the EP&A Act, the Department is not required to notify or exhibit the application. Upon receipt, the application was placed on the Department's website and following a review of the application, the Department did not consider that further consultation was necessary. Notwithstanding, the Department sought comments from the Environment Protection Authority (EPA) and Shoalhaven City Council (Council).

Environment Protection Authority

The EPA did not object to the modification and provided recommended conditions relating to noise and air quality, including the requirement for a noise validation within the first 12 months of operation of starch dryer no. 5. The EPA noted that the existing noise limits in the Environment Protection Licence (EPL) would remain relevant for the modification and advised that it would vary the EPL to include the same air emissions monitoring regime, including odour as for the current starch dryers. The EPA also recommended restricting the times for conducting impact piling activities in order to minimise construction noise impacts. The Department has incorporated the EPA's recommendations into the modified conditions.

Shoalhaven City Council

Council did not object to the modification and provided recommended conditions relating to flooding, traffic, car parking, stormwater, contamination, acid sulphate soils, visual amenity and waste management.

Council also raised concerns about the Proponent's compliance with the existing traffic and access conditions, relating to works on Bolong Road. The Department has referred Council's concerns to its compliance unit for review and action if required.

5. CONSIDERATION

The Department has assessed the merits of the proposed modification. During this assessment, the Department has considered the:

- EA and Director-General's assessment report for the original project application;
- existing conditions of approval (as modified);
- the EA supporting the proposed modification (Appendix B);
- submissions from government authorities (Appendix C);
- relevant environmental planning instruments, policies and guidelines; and
- requirements of the EP&A Act, including the objects of the Act.

The Department considers that the modification would have only minor impacts, with odour, traffic, noise and flooding the key issues. The Department's assessment of other issues is provided in **Table 1**.

5.1 Odour

Issue

The Shoalhaven Starches factory and environmental farm had a history of generating offensive odour, primarily originating from the irrigation of its wastewater on the environmental farm. However since 2011, following implementation of the mandatory odour controls approved as part of the ethanol expansion project, which included installation of a wastewater treatment plant, odour emissions from the site have significantly reduced. This has been demonstrated through quarterly odour monitoring, independent annual odour audits and a substantial reduction in the number of complaints received. Hence, any modification to factory processes requires careful analysis of the potential for increases in odour emissions. The starch dryer was previously assessed as part of the ethanol

expansion project, however the modification seeks to relocate it within the factory and increase its footprint.

Consideration

Stephenson Environmental Management Australia (SEMA) prepared an air quality impact assessment (AQIA) to predict the potential odour and total suspended particulate (TSP) emissions from the modified starch dryer and cumulative emissions from the factory.

The starch dryer includes a 33.4m high dryer stack with a fabric filtration baghouse for pollution control.

The nearest residential receivers that were assessed include properties located within the townships of Bomaderry, Terara, Nowra and North Nowra, consistent with the receivers modelled in the odour assessment for the ethanol expansion project and for the annual odour audits of the facility.

SEMA used odour emissions monitoring data from the existing starch dryers as model inputs and included a conservative worst-case value for particulate emissions.

The AQIA predicted worst case cumulative ground level concentrations from the factory and the relocated starch dryer, at the nearest sensitive receiver location in Bomaderry as follows:

- odour - 0.4 odour units (ou); and
- TSP - 2 micrograms per cubic metre ($\mu\text{g}/\text{m}^3$).

These fall well below the EPA criteria of 2.0 ou and $90 \mu\text{g}/\text{m}^3$ respectively.

The EPA advised that it is satisfied that relocation of the starch dryer within the factory would not result in additional cumulative odour or particulate impacts to those previously assessed and determined as part of the ethanol expansion project approval. The EPA advised that it would amend the EPL to include the same air emissions monitoring regime, including odour as for the current starch dryers. The EPA also recommended that the odour monitoring results from the no. 5 starch dryer be included in the annual independent odour audit.

Recommendation

The Department notes that the air emissions from the starch dryer were previously assessed in the ethanol expansion project approval and agrees with the conclusions of the AQIA for the modification, that the relocated starch dryer would not increase odour or particulate emissions from the factory above regulatory limits. The Department has included the EPA's recommendations in the modified conditions, including a requirement to conduct odour monitoring on the relocated starch dryer in accordance with the EPL and report the results in the annual odour audit.

5.2 Traffic

Issue

The factory fronts a long section of Bolong Road and has multiple points of access for both light and heavy vehicles. As part of the ethanol expansion project, Shoalhaven Starches upgraded the access points and parts of Bolong Road to improve safety, including construction of central barriers, a pedestrian refuge, turning bays and lighting. Further road works are approved but yet to be constructed, including access for the packing plant on the northern side of Bolong Road and upgrades to the former Dairy Farmers access.

The modification has the potential to increase traffic volumes on Bolong Road and alter access and parking arrangements over the two month construction period.

Consideration

ARC Traffic and Transport prepared a traffic impact assessment (TIA) for the modification considering construction traffic volumes and movements, access and parking. The modification would not increase production volumes, hence operational traffic would not change. There would also be no change to the existing access points to the factory. However, the modification would require a temporary redistribution of staff car parking to the northern side of Bolong Road for the Stage 1 construction period.

The TIA noted that vehicles would use the existing access point at the western end of the factory and estimated that during construction there would be:

- 10 heavy vehicles per day, with a maximum of 2 during peak periods; and
- 2 light vehicle trips in peak periods (the majority of the 30 construction workers would be transported by shuttle buses from Wollongong outside of normal commuter peak periods).

The TIA analysed intersection performance using SIDRA and noted that all site access intersections currently operate at a good level of service. ARC analysed the potential impacts during construction and concluded that there would be no significant impact on the local traffic network with no changes in delay, reduction in capacity or increased queue lengths. Hence, no traffic control measures are required for the modification.

In relation to staff parking, construction of the starch dryer would require the use of the temporary car park on the northern side of Bolong Road (approved as part of MOD 6), with 30 staff parking spaces relocated from the starch dryer site and a further 30 spaces provided for construction vehicles. The TIA considered the associated redistribution of staff vehicle trips and concluded that there would be no impact on the operation of the local road network. During Stage 2 construction, the 30 staff parking spaces would be reinstated adjacent to the starch dryer and trip distribution would return to the existing profile.

ARC also noted that workers crossing Bolong Road between the temporary car park and the factory would use the existing pedestrian refuge located close to the car park, which connects with the existing pedestrian paths within the factory.

Council provided recommended conditions for the design and construction of internal car parking, pedestrian access and access for large vehicles to the relocated starch dryer. These recommendations have been incorporated into the modified conditions.

Recommendation

The Department's assessment concludes that the traffic increases associated with the modification are minor, short-term and can be accommodated on the existing road network without the need for traffic control measures or upgrades. The Department concludes that the existing conditions which require parking and access to comply with relevant Australian Standards and restrict vehicles from queuing or parking on the public road network are adequate for managing the minor and temporary traffic increases associated with the modification.

5.3 Noise

Issue

Noise associated with the starch dryer was assessed as part of the ethanol expansion project, however the modification seeks to relocate the starch dryer and increase its footprint. The relocated starch dryer would be located marginally closer to the residential area of Bomaderry than the approved location, hence noise has been re-evaluated.

Consideration

The EA included a noise impact assessment (NIA), prepared by Day Design. The NIA predicted construction and operational noise levels from the relocated starch dryer using a combination of measured noise levels from existing plant and manufacturer's noise data.

The nearest sensitive receivers are those nominated in the project approval and EPL and include properties in the townships of Terara, Nowra and Bomaderry (Meroo Street and Coomea Street 500m to the north-west). The noise criteria for these locations range from 38 to 42dB(A).

The NIA notes that the project specific noise criteria for all new plant and equipment on the factory site are 10dB below the criteria nominated in the project approval and EPL. At this level, new plant and equipment would not increase the overall noise levels from the factory at the nearest receivers, as outlined in the EPA's *NSW Industrial Noise Policy Application Notes*.

The NIA predicted noise emissions from key equipment within the starch dryer building including gas and steam heaters, sifters, small motors, fans and centrifuges. The NIA predicted that noise from the starch dryer would comply with the project specific noise criteria (being 10dB below the EPL criteria) at all receiver locations, ranging from 21 to 32 dBA, provided it is constructed to certain specifications. The NIA specified the minimum weighted sound reduction index for the walls, roof and roller doors and advised that the roller doors should only be located on the eastern and southern facades of the building and must remain closed at all times when the starch dryer is operational.

The NIA predicted that construction noise would comply with the noise management goals of 43-50dB(A), and noted that piling works for the construction of foundations would be the noisiest activity and would be undertaken over a period of two weeks.

The EPA reviewed the NIA and noted that noise from operation of the relocated starch dryer would comply with the noise limits in the EPL provided it is constructed in accordance with the recommendations of the NIA. The EPA recommended that a noise validation be undertaken within the first 12 months of operation of the starch dryer to confirm that noise levels comply with the predictions and if not, the Proponent is required to implement all reasonable and feasible mitigation measures to achieve compliance. In relation to construction noise, the EPA recommended restricting construction works to standard construction hours and further limiting piling works to between 9am to 5pm Monday to Friday only.

Recommendation

The Department concludes that noise from the relocated starch dryer would comply with the existing noise limits in the project approval and EPL and that the noise validation recommended by the EPA would ensure that the starch dryer is constructed according to the required acoustic specifications. The Department also agrees with the recommendation to require the Proponent to implement reasonable and feasible mitigation measures to ensure compliance with the noise limits and to restrict piling works to the hours between 9am and 5pm, Monday to Friday only.

5.4 Flooding

Issue

The factory is located on the northern bank and floodplain of the lower Shoalhaven River. Intensification of development on the floodplain has the potential to restrict flow paths and affect floodplain storage volumes, potentially increasing flood levels on and off-site.

Consideration

WMA Water (WMA) prepared a flood impact assessment (FIA) as part of the EA for the modification. The FIA used hydraulic modelling from the *Shoalhaven River Flood Study, March 2013* (prepared by WMA Water for Shoalhaven Starches) to assess the flooding impacts of the modification. The FIA considered cumulative development on the floodplain since 1990, climate change and the increases in the depth of above floor building inundation, due to the modification. The FIA also considered the modification in terms of compliance with Council's *Development Control Plan 2014, Chapter G9: Development on Flood Prone Land* (DCP).

The modification would replace an existing industrial building (1,660m²) with a larger footprint (3,000m²). The existing industrial building already blocks flood flows, hence the FIA considered the impacts from the extra 1,340m² in building footprint. The FIA concluded that there would be no change to the 1% Annual Exceedance Probability (AEP) flood level as a result of the modification.

The FIA noted that the loss of temporary floodplain storage volume due to the works would also be negligible, given that all development on the floodplain since 1990 represents less than 1% of the total available floodplain storage area for the northern floodplain.

Increases in the depth of above floor building inundation would be less than 0.01m for 28 of the nearest flood affected buildings. This is considered to be very low and within the accuracy of the modeling, hence the increase is considered negligible. One industrial building adjacent to the proposed starch dryer would experience a slightly higher increase due to the modification, however this building would already be inundated by floodwaters greater than 1m during the 1% AEP, hence the small increase due to the modification would have minimal impact on flood damages.

The FIA considered the modification in the context of Council's DCP and concluded that the works would not increase the number of workers on the site, additionally threaten their safety during a flood or increase the need for emergency services. The works are located on industrial land with nil existing vegetation and do not involve habitable or non-habitable residential storage or car parking. The impacts of the starch dryer are partially mitigated as it would be located primarily on an existing building footprint. Hence the modification would comply with Council's DCP.

Council did not raise any concerns regarding flooding and recommended conditions requiring construction of the starch dryer building to withstand flooding, and requirements for flood emergency management procedures. These recommendations have been incorporated into the modified conditions.

Recommendation

The Department's assessment concludes that the modification would have negligible flooding impacts. However, the Department recommends that any new buildings and structures, including the starch dryer are built to withstand flooding and in accordance with Council's DCP. The Department also recommends that all hazardous materials on the site are stored above the 1% AEP flood level and that the Proponent updates its existing flood mitigation and management plan to cover the modification and include emergency response procedures.

5.5 Other Issues

Table 1: Assessment of other issues

Issue	Assessment	Recommendation
Contamination	<ul style="list-style-type: none"> The EA included a site investigation report prepared by Coffey, which included a review of testing undertaken in a 2003 investigation of the site, collection and analysis of surface and sub-surface soil samples in areas of environmental concern. The investigation noted that the industrial building where the starch dryer is to be located was previously used for metal manufacturing, mechanical repairs and maintenance activities. An abandoned underground fuel storage tank was also noted as occurring to the west of the industrial building. Samples were analysed for hydrocarbons and heavy metals with results compared to relevant criteria for industrial land use including the <i>National Environment Protection (Assessment of Site Contamination) Measure 2013</i> (NEPM) and the <i>Cooperative Research Centre for Contamination Assessment and Remediation of the Environment 2011</i> (CRC CARE). All samples analysed were below the adopted NEPM and CRC CARE criteria. Results of testing undertaken in 2003 in the vicinity of the abandoned underground storage tank indicated that contamination was not widespread. Coffey recommended that due to the history of workshop activities, an unexpected finds protocol should be prepared for works involving significant soil disturbance. Analysis of a sample close to Abernethy's Creek noted that there is some potential for acid sulfate soils and Coffey recommended that an acid sulfate soil management plan be prepared for construction works. Council did not raise any concerns regarding contamination and provided recommended conditions for management and off-site disposal of contaminated materials. The Department concludes that given the site is to continue in industrial use, no further investigation or remediation works would be considered necessary for construction of the starch dryer and any potential contamination could be effectively managed via implementation of an unexpected finds protocol. The Department notes that the existing conditions also require the Proponent to implement an acid sulfate soil management plan. This condition has been updated to include the modification. 	<ul style="list-style-type: none"> The Proponent shall prepare an unexpected finds protocol prior to the commencement of construction to ensure that potentially contaminated material is appropriately managed and any disposal of material off-site is reported to Council; The Proponent shall implement the unexpected finds protocol during construction of the relocated starch dryer; and Update and implement the acid sulfate soil management plan to include the modification.
Hazards and risks	<ul style="list-style-type: none"> The EA included a Preliminary Hazard Analysis (PHA) prepared by Pinnacle Risk Management. The Department's hazard and risk specialist reviewed the PHA and noted that it has been prepared in accordance with the Department of Planning's <i>Hazardous Industry Planning and Advisory Paper No. 4</i> (HIPAP 4). The Department notes that the PHA provides sufficient process description, the hazard identification is comprehensive and adequate prevention and mitigation measures are proposed. The Department agrees that the most severe consequence as identified in the PHA are (1) dust explosion, (2) jet fire from release of natural gas, and (3) flash fire from release of natural gas. These scenarios were carried forward for consequence analysis and the worst case scenarios were modeled. The PHA demonstrates that the consequence impacts are within the site boundary and are unlikely result in offsite risk. The PHA also acknowledges the risk of propagation to the neighbouring equipment, but that this is unlikely to pose off-site risk. The PHA includes adequate safeguarding and mitigation measures, which should be fully implemented to minimise risks. The Department's assessment concludes that the modification would satisfy the risk criteria in HIPAP 4 and recommends that the Proponent update the existing hazard studies to include the modification. These include the Fire Safety Study, Emergency 	<ul style="list-style-type: none"> Prior to commissioning, the Proponent shall prepare and/or update the following hazard studies to the satisfaction of the Secretary: <ul style="list-style-type: none"> - Fire Safety Study; - Emergency Plan; - Safety Management System; - Final Hazard Analysis; and - Hazard and Operability Study; and The Proponent shall carry out a Hazard Audit within 12 months of commencement of

Issue	Assessment	Recommendation
	Plan, Safety Management System and Final Hazard Analysis. A Hazard and Operability Study is also required prior to commissioning the starch dryer and a hazard audit is required 12 months after the commencement of operation of the starch dryer.	operation of the starch dryer.
Riverbank stability	<ul style="list-style-type: none"> • Coffey Geotechnics (Coffey) carried out a geotechnical assessment to determine the potential effects of construction of the proposed starch dryer on the stability of Abernathy's Creek and the northern bank of the Shoalhaven River. • The starch dryer would be located 8m from the western bank of Abernathy's Creek and over 100m from the northern bank of the Shoalhaven River. Given the distance to the Shoalhaven River bank, impacts from the starch dryer were considered unlikely. • The assessment considered the current condition of Abernathy's Creek and the proximity of the proposed starch dryer and concluded that its construction would be unlikely to adversely impact on the stability of the creek bank. There would not be any significant excavation or filling and the starch dryer foundations would be piled to bedrock. • Several recommendations were made in the assessment, including provision of dedicated drainage paths to the creek with adequate erosion protection, supervision of any excavations deeper than 600mm near the creek bank, monitoring following significant rainfall events and ensuring there are no heavy vehicles or heavy equipment storage near the creek banks. • Council did not raise any concerns regarding riverbank stability and recommended that the Proponent prepare a stormwater management plan for the modification. • The Department's assessment concluded that the modification would not adversely impact on the stability of the creek banks. The recommendations made in the assessment and provided by Council have been incorporated into the modified conditions. 	<ul style="list-style-type: none"> • The Proponent shall provide dedicated drainage paths to the western bank of Abernathy's Creek with suitable erosion protection; • A geotechnical engineer shall supervise excavations between the starch dryer and Abernathy's Creek; • The Proponent shall conduct visual monitoring of the creek banks following significant rainfall events; and • No heavy vehicles or equipment is to be stored between the starch dryer and Abernathy's Creek.
Visual amenity and building height	<p><u>Visual Amenity</u></p> <ul style="list-style-type: none"> • The starch dryer would be 28m above ground level with the stack extending to 33.4m and the dryer ducting to a height of 36m. • The starch dryer would be most visually prominent to passing traffic and pedestrians on Bolong Road as it is located 45m from the roadway. Many of the existing factory buildings and processing equipment are also located adjacent to Bolong Road, including the interim packing plant at 34m high. The proposed starch dryer would be consistent in size, scale and colour with these structures. • The starch dryer would also be partially visible from the residences on the southern side of the Shoalhaven River around 750m from the site. However there are other intervening structures of similar height (DDG pelletiser plant at 29m and stack at 49m) and vegetation that would partially screen the starch dryer from this viewpoint. • Council did not raise any concerns regarding visual amenity and recommended the use of non-reflective building materials. • The Department's assessment concludes that the visual impacts of the proposed modification would be minimal given the scale of the existing industrial development on the site and that the additional structures would generally be of a similar appearance, height and bulk to the existing structures on the site. The Department considers that the visual impacts of the modification would be minor and would not require any specific conditions beyond the control of lighting, use of non-reflective building materials and landscaping requirements of the existing approval. <p><u>Tall Structures</u></p> <ul style="list-style-type: none"> • HMAS Albatross (airbase) is located 10km south-west of the factory. • The Proponent provided information to the Department of Defence regarding the height of the starch dryer (36m) and associated stack (33.5m). • The Department of Defence considered the potential impacts to the safety of aircraft operations from HMAS Albatross and advised that it had no concerns with the modification and that the 	<ul style="list-style-type: none"> • The Proponent shall provide as-constructed details to Airservices Australia following completion of construction of the starch dryer; and • If any LED obstruction lighting is to be installed on tall structures on the site, the frequency range of the LED light emitted must fall within the range of wavelengths 655 to 930 nanometers, and be installed to the satisfaction of the Department of Defence.

Issue	Assessment	Recommendation
	<p>modification would not infringe the Outer Horizontal Surface of the Obstruction Limitation Surface of HMAS Albatross.</p> <ul style="list-style-type: none"> The Department of Defence requested that the Proponent provide as-constructed details to Airservices Australia following completion of construction of the starch dryer and recommended specific wavelength requirements if LED lighting is to be installed. The Department has incorporated the recommendations from the Department of Defence into the modified conditions. 	
Review of existing conditions	<p><u>Odour Conditions</u></p> <ul style="list-style-type: none"> The Proponent requested an amendment to Condition 6Ab) of Schedule 3 to ensure consistency with its EPL. Condition 6Ab) requires annual odour monitoring from a filling fermenter tank and specifies sampling intervals (i.e. 10%, 20%). The Proponent requested that the sampling intervals be removed to ensure consistency with the sampling requirements in the EPL. The Department consulted the EPA, and the EPA advised that it had no objection to the amendment. The EPA also requested that the requirement for annual monitoring be changed to quarterly to be consistent with the EPL. The Department has modified the condition to be consistent with the EPL. <p><u>Hazards Conditions</u></p> <ul style="list-style-type: none"> In reviewing the post approval hazards studies for MOD 5 - DDG pelletiser and stack, the Department has identified the need for a Hazard and Operability Study (HAZOP) prior to commissioning the DDG pelletiser and stack. This requirement has been included in the modified conditions. In addition, to streamline and simplify future post approval requirements for hazard studies, the Department recommends that the Proponent prepare a Fire Safety Study (FSS) covering the whole site. The site-wide FSS can then be updated for each modification, ensuring that the entire site is captured in a single study. The Department has recommended a modified condition requiring a site-wide FSS. <p><u>General Conditions</u></p> <ul style="list-style-type: none"> The Proponent requested an amendment to Condition 5A of Schedule 4, which requires updates to management plans to be submitted to the satisfaction of the Secretary. The Proponent requested that 'to the satisfaction of the Secretary' be removed. The Department notes that this request is in line with a recent review by the Department's compliance team and notes that subsequent revisions to management plans do not require the Secretary's approval. Hence, the Department agrees with the request to amend this condition. 	<ul style="list-style-type: none"> The Proponent shall conduct quarterly odour monitoring with samples taken of single vent stack (direct to atmosphere) emissions from a filling fermenter tank; Prior to commissioning the DDG pelletiser and stack, the Proponent shall prepare and obtain the Secretary's approval of a HAZOP; Prior to commissioning MOD 7, the Proponent shall prepare and obtain the Secretary's approval of a site-wide FSS covering the whole site and all modifications; and Remove the words 'to the satisfaction of the Secretary' from Condition 5A of Schedule 4.

6. CONCLUSION

The Department has assessed the proposed modification in accordance with the requirements of Clause 8B of the Regulations. This assessment has found that the proposed modification would result in minimal environmental impacts beyond the approved facility.

The modification would enable Shoalhaven Starches to optimise production of starch related products by constructing an already approved piece of equipment on a larger footprint within the factory site. The modification would not increase production volumes at the factory and would ensure that impacts remain consistent with the original approval.

Consequently, the Department is satisfied that the modification should be approved subject to conditions.

7. RECOMMENDATION

It is RECOMMENDED that the Planning Assessment Commission:

- approve the proposed modification under Section 75W of the EP&A Act; and
- sign the attached notice of modification (in Appendix A).

Deana Burn
Specialist Planner, Industry Assessments


Chris Ritchie 18/12/15.
Director
Industry Assessments


David Gainsford 7/1/16.
A/Executive Director
Key Sites & Industry Assessments

APPENDIX A – NOTICE OF MODIFICATION

See separate document titled Notice of Modification at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7371

APPENDIX B – ENVIRONMENTAL ASSESSMENT

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7371

APPENDIX C – SUBMISSIONS

See separate files at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7371

APPENDIX D – CONSOLIDATED APPROVAL

See separate file at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=7371