

MODIFICATION REPORT

**APPLICATION TO MODIFY CONCEPT PLAN (MP 10_0144)
AND PROJECT APPROVAL (MP 10_0108)
TRANSITIONAL STATE SIGNIFICANT INFRASTRUCTURE
SHOALHAVEN STARCHES GAS PIPELINE PROJECT**

**MODIFICATION APPLICATION No. 1 (Mod 1)
(MADE PURSUANT TO S. 5.25 OF THE
ENVIRONMENTAL PLANNING & ASSESSMENT ACT)**

**PROPOSED RELOCATION OF GAS PRESSURE REDUCTION STATION
AND ASSOCIATED PIPELINE WITHIN PACKING PLANT SITE;
AND INCREASE DIAMETER OF PIPE**

**Shoalhaven Starches
Bolong Road, Bomaderry**

**Prepared for
SHOALHAVEN STARCHES PTY LTD
July 2021**

Modification Report

Project	Application to Concept Plan (MP 10_0144_ and Project Approval (MP 10_0108), Transitional State Significant Infrastructure Shoalhaven Starches Gas Pipeline Project (Modification Application No. 1 (Mod 1)) Proposed Relocation of Gas Pressure Reduction Station and Associated Pipeline; and Increase Diameter of Pipe
Address	Bolong Road, Bomaderry
Our ref:	21/29
Prepared by	Stephen Richardson
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Town Planning, Agricultural & Environmental Consultants

Stephen Richardson, M.App.Sc., BTP, Grad. Dip. Env. Mgt, RPIA
Stuart Dixon, B. Urb. & Reg. Plan., RPIA
Angela Jones, BA Hons, MSc, MSSA

Associates: Peter Cowman, B.Sc.Agr., MAIA
Toni Wearne, BA (Hist.), Grad. Dip. Urb. & Reg. Plan.



Planning
Institute
Australia



Nowra: 31 Kinghorne Street, Nowra NSW 2541 (02) 4423 6198
Wollongong: 166 Keira Street, Wollongong NSW 2500 (02) 4208 2205
Email: info@cowmanstoddart.com.au

PO Box 738, Nowra NSW 2541
Fax: (02) 4423 1569
www.cowmanstoddart.com.au

COWMAN STODDART PTY LTD

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EXECUTIVE SUMMARY

Shoalhaven Starches is a member of the Manildra Group of companies. The Manildra Group is a wholly Australian owned business and the largest processor of wheat in Australia. It manufactures a wide range of wheat based products for food and industrial markets both locally and internationally.

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including starch, gluten, glucose and ethanol.

On the 30th October 2012 the Independent Planning Commission approved Concept Plan (MP10_0144) and Project Application (MP_10_0108) for the Shoalhaven Starches Gas Pipeline Project. This project provided for the installation of a 5.5 km gas pipeline connecting the Shoalhaven Starches factory site located at Bolong Road, Bomaderry directly to the Eastern Gas Pipeline (EGP) at Pestells Lane, Meroo Meadow. The pipeline would tie directly into the EGP and provide gas directly to the Shoalhaven Starches factory.

As part of the project, a metering facility would be installed at the tie-in location at Meroo Meadow. In addition, a pressure reduction facility would be installed at the end of the pipeline to ensure a continuous pressure of 3,500 kPa was maintained to service both the factory as well as the proposed Gas Co-generation Plant that has been approved for the Shoalhaven Starches factory site as part of the Minister's approval for the Shoalhaven Starches Expansion Project (MP06_0228).

Shoalhaven Starches have been reviewing the design requirements for this project and seek to undertake the following modifications to the project / concept approval:

- To relocate the approved location of the Gas Pressure Reduction Station (GPRS) that is to be located on the approved Packing Plant site to the north of Bolong Road; and
- To alter the diameter of the pipeline which will result in an increase in the diameter of the pipeline from DN 150 to DN 300.

Concept Plan Approval 10_0144 and Project Approval 10_0108 were transitioned on the 30th April 2021 (Government Gazette 174 – Environment) to the State Significant Infrastructure (SSI) under clause 5 of Schedule 2 to the *Environmental; Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*.

As State significant infrastructure, any modifications are required to obtain approval from the NSW Minister for Planning pursuant to Section 5.25 of the Environmental Planning & Assessment Act.

The preparation of this Modification Report has been undertaken following consultation with the DPIE, the EPA, The Natural Resource Access Regulator (NRAR), Fire & Rescue NSW, and Shoalhaven City Council.

The Modification Report is supported by the following expert assessments:

- A Preliminary Flood Hazard Analysis prepared by WMAwater (**Annexure 3**) concludes that:
 - The increase in diameter of the pipe will have no impact on flooding as the pipe is underground and it is only during the construction phase that consideration is required for the potential impacts on the environment and during flood events.
 - Construction of the GPRS should have negligible impact on flooding as the plant is constructed on piers, thus resulting in minimal loss of temporary floodplain storage or conveyance. However, this assessment should be reviewed once final design plans of the GPRS become available.
- A Preliminary Hazard Analysis (PHA) undertaken by Pinnacle Risk Management (**Annexure 4**) that assess the risks associated with the proposed modifications and provides a comparison against relevant risk criteria. The PHA demonstrates the Modification Proposal will comply with all risk criteria. The PHA also concludes that societal risk, area cumulative risk and environmental risk will be acceptable.
- A Geotechnical – Creek Bank Stability, Contamination and Acid Sulfate Soil Assessment prepared by GHD (**Annexure 5**) that addresses, site contamination, acid sulphate soils and riverbank stability issues. This assessment concludes:
 - In terms of the impacts on the stability of the banks of Abernethys Creek, this assessment identifies the factor of safety in respect to the stability of the creek bank, following excavation of 1 m deep trench for the gas pipeline construction, in conjunction with the rail and Packing Plant development is acceptable for the long-term condition, and will not influence the stability of the western bank of Abernethy's Creek.
 - With respect to site contamination, GHD indicate the likelihood for contamination to exist at the site is low. GHD conclude no further investigation is warranted. Although the likelihood for contamination was assessed as low, GHD recommend that a Construction Environmental Management Plan (CEMP) be prepared to manage the occurrence of potential contamination, buried waste, demolition waste, ACM, etc. in all parts of the site during construction. The CEMP should also include an Unexpected Finds Protocol (UFP).
 - In relation to the potential presence of Acid Sulphate Soils (ASS), GHD indicate that ASS are likely to be encountered within the proposed packing plant site, particularly the

lower lying areas, in the north and east. The eastern and north-eastern portion of the proposed gas pipeline passes through these areas and likely to intercept ASS, and groundwater. GHD recommend that an ASS Management Plan (ASSMP) should be prepared to appropriately manage the disturbance of ASS and mitigating potential acid generation and impacts to groundwater and adjacent waterbodies.

The Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification proposal will not result in any increases in overall production rates from the site, nor will it involve any significant changes in level of impacts arising from the approved development.

The Modification Report concludes that the proposed modifications will have not have significant adverse environmental impacts and the development to which Concept Plan (MP 10_0144) and Project Approval (MP 10_0108) as modified by the Modification Application relates, will be substantially the same development as the development for which this consent was originally granted and before that consent as originally granted was modified.

1.0 INTRODUCTION

On 30th October 2012, the Independent Planning Commission approved Concept Plan (MP 10_0144) and Project Application (MP 10_0108) for the Shoalhaven Starches Gas Pipeline Project. This project provided for the installation of a 5.5 km gas pipeline connecting the Shoalhaven Starches factory site located at Bolong Road, Bomaderry directly to the Eastern Gas Pipeline (EGP) at Pestells Lane, Meroo Meadow. The pipeline would tie directly into the EGP and provide gas directly to the Shoalhaven Starches factory.

Shoalhaven Starches have been reviewing the design requirements for this project and seek to undertake the following modifications to the project / concept approval:

- To relocate the approved location of the Gas Pressure Reduction Station (GPRS) that is to be located on the approved Packing Plant site to the north of Bolong Road; and
- To alter the diameter of the pipeline which will result in an increase in the diameter of the pipeline from DN 150 to DN 300.

Concept Plan Approval 10_0144 and Project Approval 10_0108 were transitioned on the 30th April 2021 (Government Gazette 174 – Environment) to the State Significant Infrastructure under clause 5 of Schedule 2 to the *Environmental; Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*.

As State Significant Infrastructure, any modifications are required to obtain approval from the NSW Minister for Planning pursuant to Section 5.25 of the Environmental Planning & Assessment Act.

The Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification proposal will not result in any increases in production rates from the site, nor will it involve any changes in level of impacts arising from the approved development.

The Modification Application is made pursuant to Section 5.25 of the Environmental Planning & Assessment Act. This Modification Report has been prepared in support of the Modification Application.

The Modification Report has been prepared following consultation with the:

- DPIE;
- EPA;
- NRAR;
- Fire & Rescue NSW;
- Shoalhaven City Council.

Responses from the above government agencies that have been received at the time of preparing this Modification Report are included as **Annexure 1** to this report.

The Modification Application is supported by plans included in **Annexure 2**, and the following expert assessment reports:

- A Preliminary Flood Hazard Analysis prepared by WMAwater (**Annexure 3**);
- A Revised Preliminary Hazard Analysis prepared by Pinnacle Risk Management (**Annexure 4**).
- A Geotechnical – Creek Bank Stability, Contamination and Acid Sulfate Soil Assessment, prepared by GHD (**Annexure 5**).

It is considered that the components associated with this Modification Application will not have any significant adverse environmental impacts; and as a result of this Modification Application the development to which Concept Plan (MP 10_0144) and Project Approval (MP 10_0108) as modified relates will be substantially the same development as the development for which this consent was originally granted and before that consent as originally granted was modified.

2.0 SUBJECT LAND

The Shoalhaven Starches Gas Pipeline Project provided for the installation of a 5.5 km gas pipeline connecting the Shoalhaven Starches factory site located at Bolong Road, Bomaderry directly to the Eastern Gas Pipeline (EGP) at Pestells Lane, Meroo Meadow. The pipeline would tie directly into the EGP and provide gas directly to the Shoalhaven Starches factory.

Section 3.2.1 of the Environmental Assessment that supported the original Concept Plan and Project Application outlined the pipeline would tie-in to the EGP at the existing Bomaderry Meter Station and travel along the following general route as denoted in **Figure 1**.

- Follow Pestells Lane in a south-easterly direction;
- Cross Princes Highway and follow the transmission line easement to Meroo Road;
- Cross Meroo Road and travel south to Fletchers Lane;
- Follow Fletchers Lane east to the railway tracks ;
- Cross railway tracks and follow road easement adjacent to rail easement in a generally southerly direction to Edwards Avenue;
- Cross Edwards Avenue and continue in a southerly direction;
- Change of direction – head in an easterly direction; and
- Change of direction – head in a southerly direction until pressure reduction facility is reached.

This Modification Application does not seek to change the approved route of the pipeline, except for that section of the route that is situated within the approved Packing Plant site approved under Project Approval MP 06_ 0228 for the Shoalhaven Starches Expansion Project. The land associated with the approved Packing Plant under Project Approval MP 06_0228 comprises:

- Lot 2 DP 538289; and
- Lot 16 DP 1121337

Figure 2 is a site locality plan identifying the location of these allotments; **Figures 3 and 4** are aerial photographs of these allotments.

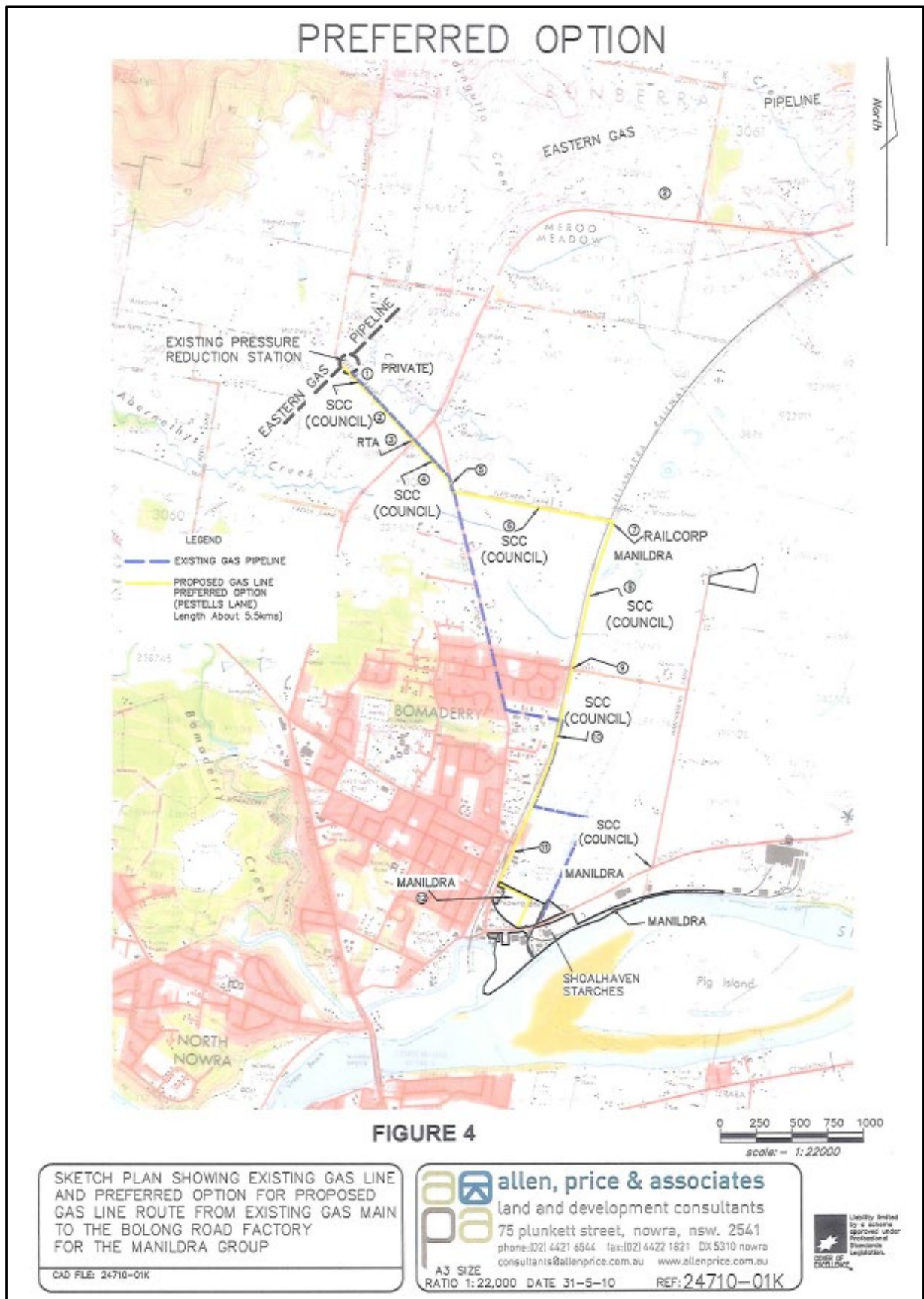


Figure 1: Approved route of Gas Pipeline Project.

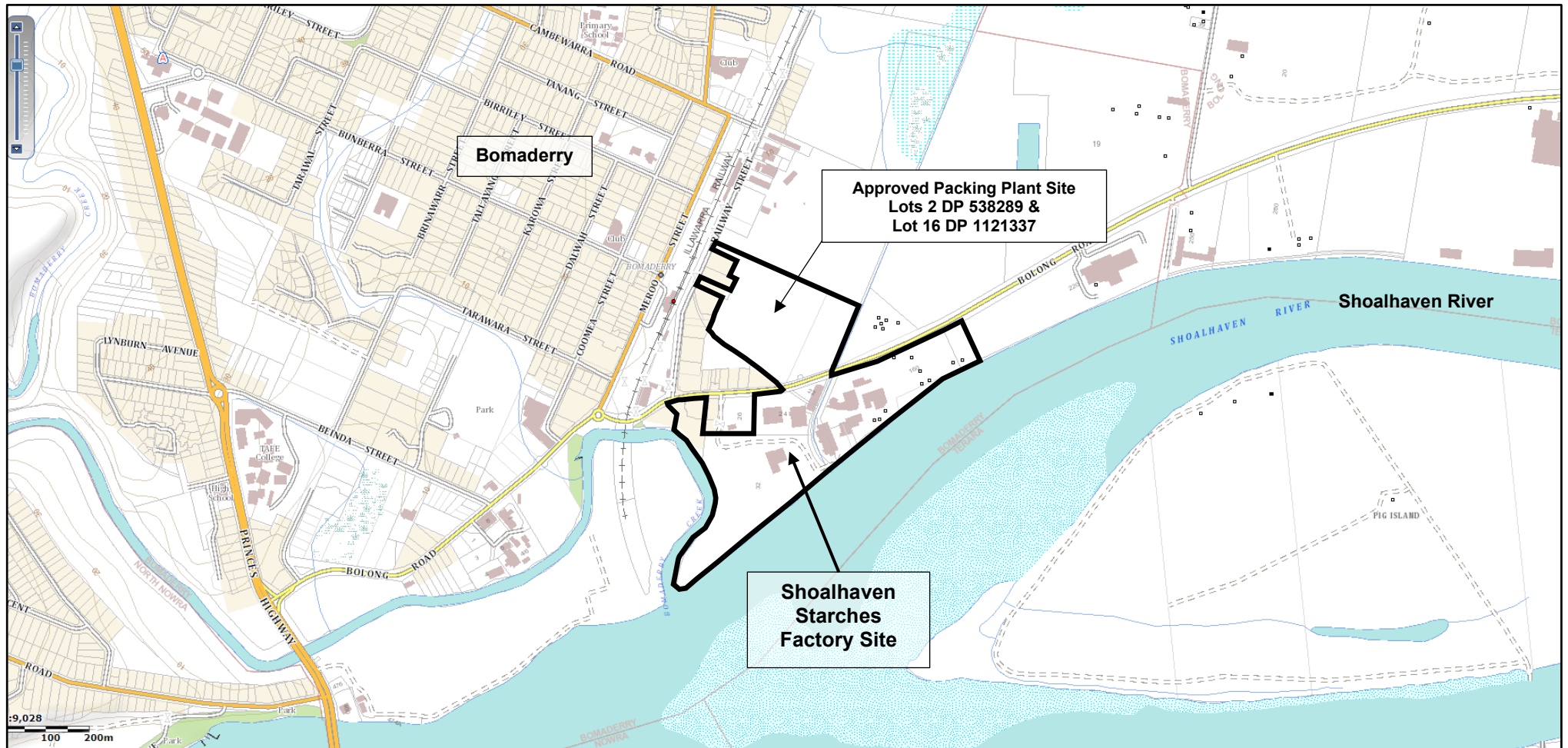


Figure 2: Site Locality Plan.



Figure 3: Aerial photograph of locality.

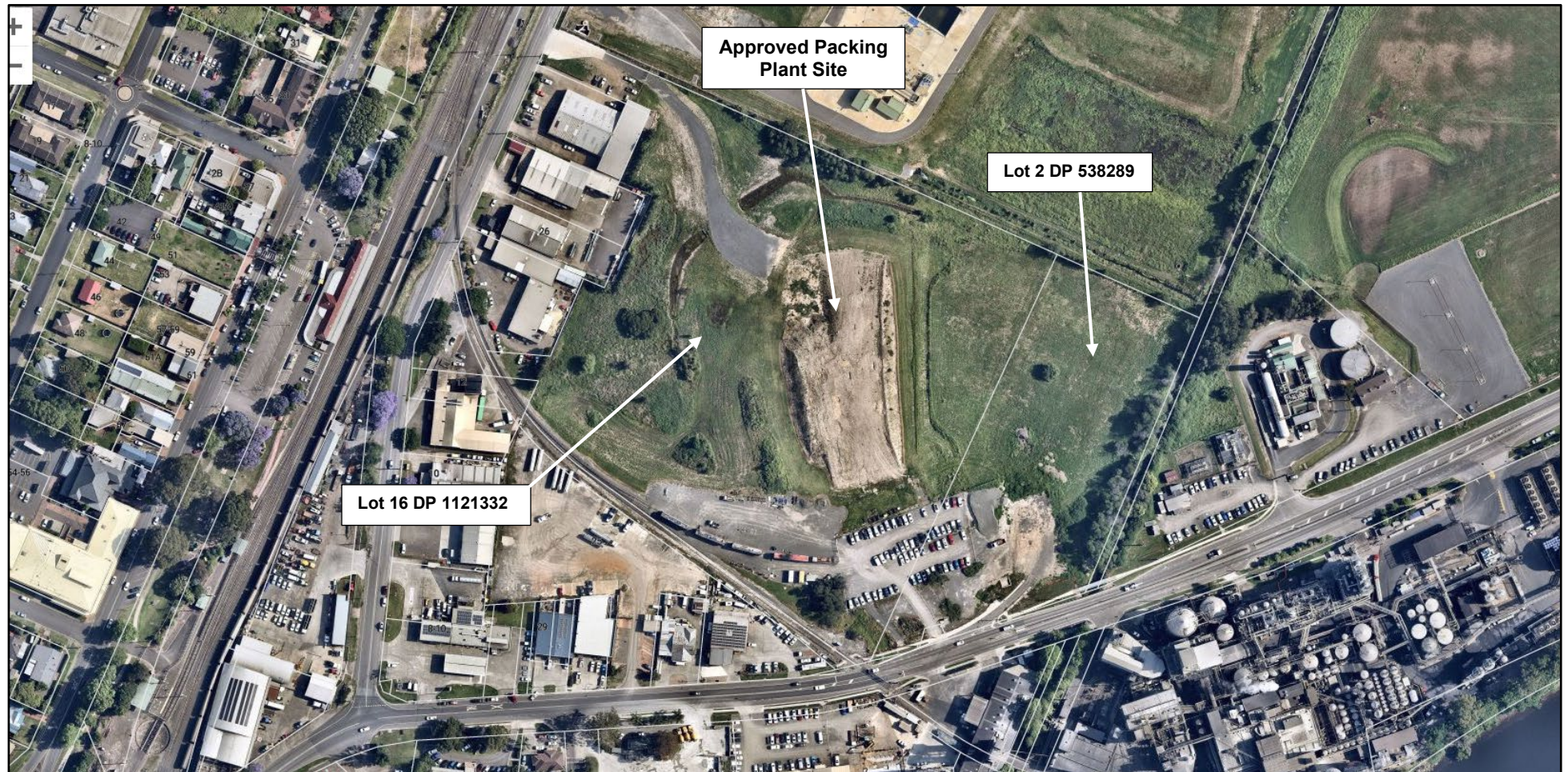


Figure 4: Aerial photograph of Shoalhaven Starches approved Packing Plant Site.

3.0 BACKGROUND

3.1 PRODUCTION PROCESSES

The production process at the Shoalhaven Starches plant have evolved over a number of decades. Originally the plant was primarily concerned with the production of starch and gluten from flour. However, the Company has pursued a number of technological innovations particularly with respect to reducing the environmental impacts of the Company's overall operations. As a result, Shoalhaven Starches has been moving towards a "closed" system of production. Essentially this entails the efficient use of end products to ensure wastage is reduced to a minimum.

The first step in the production process is the delivery of flour and grain, by rail, from the Company's flour mills at Manildra, Gunnedah and Narrandera. The trainloads are brought into the plant via the switching yard at Bomaderry.

The Company received approval from the Minister for Planning for the erection of flour mills on site to enable the milling of part of the Company's flour requirements to be processed directly on the site. The remainder of the Company's flour requirements continue to be sourced from the Company's off-site flour mills.

Flour is transferred via storage to the "wet end" of the plant where fresh water is added. The subsequent mixing and separation process produces starch and gluten. The gluten is dried to enable it to be packaged and distributed as a high protein food additive for human consumption. This product is then taken from the site after packaging for both local and export markets.

The starch that is separated from the flour is either dried or remains in liquid form. The dried and liquid starch is sold to the paper and food industries. The starch is used for food, cardboard, paper and other industrial purposes. Liquid starch is used in the ethanol production process.

Starch is also used in the production of syrups on the site. The syrups plant products include glucose and brewer's syrup. These are used for foods, chocolates, confectionery, beer, soft drinks and fruit juice. The syrups plant products can also be used in the ethanol process.

The by-products from the starch, gluten and syrup production processes are combined to feed the fermentation and distillation stage of ethanol production. The outputs are fuel, industrial and beverage grade ethanol. Industrial grade ethanol is used in producing pharmaceuticals, printer's ink and methylated spirits.

Ethanol production results in some liquid and solid by-products, which are processed through the stillage recovery process plant (which was approved as part of PRP No. 7 in 2005). The solids in the stillage are recovered as Dried Distillers Grains Syrup (DDGS), dried and sold as a high protein cattle feed with the remaining water used for irrigation.

The wastewater resulting from the ethanol production is treated in the wastewater treatment plant located on the northern side of Bolong Road and is re-used in the Starch Plant and the surplus is irrigated onto Shoalhaven Starches Environmental Farm to the north of Bolong Road. This farmland is used for fodder crops, pasture and cattle grazing.

Boilers are used to produce steam which is used for a multitude of purposes throughout the factory site wherever product is dried, evaporated or heated.

3.2 THE SHOALHAVEN STARCHES GAS PIPELINE PROJECT

On the 30th October 2012 the Independent Planning Commission approved Concept Plan (MP10_0144) and Project Application (MP_10_0108) for the Shoalhaven Starches Gas Pipeline Project. This project provided for the installation of a 5.5 km gas pipeline connecting the Shoalhaven Starches factory site located at Bolong Road, Bomaderry directly to the Eastern Gas Pipeline (EGP) at Pestells Lane, Meroo Meadow. The pipeline would tie directly into the EGP and provide gas directly to the Shoalhaven Starches factory.

As part of the project, a metering facility would be installed at the tie-in location at Meroo Meadow. In addition, a Gas Pressure Reduction Station would be installed at the end of the pipeline to ensure a continuous pressure of 3,500 kPa was maintained to service both the factory as well as the proposed Gas Co-generation Plant that has been approved for the Shoalhaven Starches factory site as part of the Minister's approval for the Shoalhaven Starches Expansion Project (MP06_0228).

Following the 2009 approval by the Minister for Planning of the Shoalhaven Starches Expansion Project, production of ethanol at the Shoalhaven Starches factory will increase in a staged manner from the current approved level of 126 ML per year to 300 ML per year. The energy requirements for the Shoalhaven Starches operations will increase substantially as a result of this approval.

At present the Shoalhaven Starches site is connected to the EGP by a private lateral gas pipeline owned by EVO Energy.

Shoalhaven Starches have been investigating ways in which they can reduce their energy costs including through improved competition within the gas supply market to accommodate their approved expansion plans.

To address this situation Shoalhaven Starches have obtained Concept and Project Approval to construct their own pipeline to connect the factory site directly to the EGP. This project will enable Shoalhaven Starches to gain direct access to the EGP and the various gas retailers who transport gas along the EGP. Shoalhaven Starches will then be able to take advantage of competition between gas retailers and seek an improved cost of supply of gas for their operations.

Condition No. 6 of the Project Approval for the Shoalhaven Starches Gas Pipeline Project required that the approval would lapse if the works associated with the approval were not physically commenced within 5 years of the date of the approval (ie. 30 October 2017). In November 2012 Allen Price & Scarratts Surveyors carried out various survey activities including fieldwork on the site of the Project and in connection with the Concept and Project Approval. It is Shoalhaven Starches view that the work undertaken by Allen Price & Scarratts was sufficient to meet the requirements of condition 6 of this Project Approval.

Under these circumstances it is Shoalhaven Starches view that physical works have commenced on this project in accordance with condition No. 6 of the Project and Concept Approvals.

It is understood that following the repeal of Part 3A of the Environmental Planning & Assessment Act any modifications to Concept and Project Approvals MP 10_0144 and MP 10_0108; these approvals will be required to be transitioned to State Significant Infrastructure (SSI) under Part 5 of the Environmental Planning & Assessment Act 1979 (EPA&A Act).

This is the first Modification Application with respect to this Concept and Project Approval for this transitioned State Significant Infrastructure.

4.0 CONSULTATION

Prior to the preparation of this Modification Report consultation has been undertaken with:

- Department of Planning, Industry and Environment;
- EPA;
- Natural Resource Access Regulator (NRAR);
- NSW Fire & Rescue;
- Shoalhaven City Council (SCC);

An initial scoping meeting was held between staff from DPIE, Shoalhaven Starches and Cowman Stoddart on the 1st April 2021. DPIE have confirmed (**Annexure 1**) that the Modification Application could be considered pursuant to Section 5.25 of the Environmental Planning & Assessment Act and subsequently confirmed the requirements for the preparation of this Modification Report.

Written consultation was undertaken separately with the EPA, NRAR, NSW Fire & Rescue, and SCC. At the time of preparing this Modification Report responses have been received from the EPA, NRAR and SCC and these responses are also included in **Annexure 1** to this report. The following is a summary of the responses made by government agencies to this proposal at the time of preparing this report.

EPA

"I refer to your email to the EPA on 26 March 2021, requesting EPA's comments on the proposal to modify existing project approvals MP10_0144 and MP10_0108. These two approvals allow Shoalhaven Starches to install a 5.5km gas pipeline that connects the premises to the Eastern Gas Pipeline in Meroo Meadow. The gas pipeline installation project also includes a Gas Pressure Reduction Facility (GPRF) located at the premises. The proposed modification to these approvals would increase the internal diameter of the pipeline, and to relocate the location of the GPRF from the north-eastern boundary of the packing plant site, to closer to Bolong Road.

The EPA has reviewed the scoping document for the proposed modification, and notes that the proposed modification is not expected to create additional noise issues. It is also noted that the Construction Noise and Vibration Management Plan (CNVMP) for the original project approvals predicted that the predicted noise levels will be in excess of the Noise Management Levels (NML). As such, the recommendations in outlined in EPA's submission dated 24 May 2012 in response to the original project still applies to the proposed modification.

The EPA also notes that the proposed modification relocates the gas pipeline route to being 15m away from the banks of Abernathy's Creek. Due to the proximity of the pipeline to Abernathy's Creek, the proponent should ensure that during construction of the pipeline, all feasible and reasonable sediment and erosion control measures should be implemented so as to not cause pollution of waters."

Comment

- Conditions 8 – 14 (Schedule 3) of the Project Approval stipulate a range of requirements in terms of the management of noise and vibration associated with the project. Furthermore, such measures will need to be documented in Construction Environmental Management Plan for the project under condition 1 of Schedule 4 of the Project Approval.

The slight increase in the diameter of the pipe will not alter the dimensions of the trench, and thereby will not involve an increase in the extent of excavations and works to lay the pipeline, it is considered this aspect of the Modification Proposal will not result in any additional noise issues that were also not already considered as part of the original Project Approval. It is therefore considered that this issue does not require further consideration as part of the Modification Application.

- Condition 18 (Schedule 3) of the original Project Approval requires the preparation and implementation of a Soil and Water Management Plan (SS&WMP) for the project. The S&WMP is required to be prepared in consultation with both Council and the NSW Office of Water. Furthermore the S&WMP is required to be documented in the projects Construction Environmental Management Plan (condition 1 (Schedule 4) under the Project Approval. The proposed modified works associated with this Modification Application will need to be addressed as part of S&WMP.

Under these circumstances the Project Approval already makes provision for the implementation of feasible and reasonable sediment and erosion control measures to ensure the proposed approved works (as modified) will not cause pollution of waters in conjunction with this project.

Shoalhaven City Council

Development Engineering Comments/Requirements:

1. *The modification is not expected to have an impact on Council infrastructure. The revised location of the Gas Pressure Reduction Facility (GPRF) will be situated over land which currently appears to be compacted road base.*
2. *The proposed gas pipeline across Bolong Road is stated as previously approved with a revised location. Should works in the road reserve be required, approval would need to be obtained from Council for works in the road reserve in accordance with Section 138 of the Roads Act 1993.*
3. *No comments are made on the increase of the pipeline diameter.*

Comment

These comment do not raise any issues.

Environmental Health Comments/Requirements:

4. *In relation to acid sulphate soils, the increased diameter of the pipe will not impact, and the new location will not impact the existing Condition 19 of the Project Approval.*
5. *In relation to site contamination, it is noted that your submission discusses a preliminary site contamination assessment to be undertaken for the new location of the pipeline. As previous investigations by Coffey's indicated low to moderate likelihood of contamination being present and there is no change of use, a preliminary report is not considered necessary in this circumstance.*
6. *No modification is required to the environmental health conditions.*

Comment

These comment do not raise any additional issues.

Natural Resources Comments/Requirements:

7. *The installation of the pipeline should not have any negative impact on flooding as this installation will be below the ground level.*
8. *The proposed GPRF is located within the High Hazard Flood Storage zone. The GPRF is an open sided structure, and it will not likely obstruct the free flow of flood water. However, according to Chapter G9 of Shoalhaven Development Control Plan 2014, the proposed GPRF must comply with the flood related development controls. Accordingly, the application should include a Flood Compliance Report.*

Comment

The Modification Report is supported by a Preliminary Flood Hazard Analysis prepared by WMAwater (**Annexure 3**). Flooding is further addressed in Section 7.2.3 of this Modification Report.

NRAR

I am emailing in regards to your request seeking requirements for the preparation of the Statement of Environmental Effects for the proposed modification to the Shoalhaven Starches Gas Pipeline Project. NRAR will be reviewing this at modification stage once it is submitted to planning and will provide formal comments then.

Comment

This comment does not raise any additional issues that require to be addressed.

5.0 PROPOSED MODIFICATION TO CONCEPT APPROVAL MP 10_0144 AND PROJECT APPROVAL

Shoalhaven Starches have been reviewing the design requirements for this project and seek to undertake the following modifications to the project / concept approval:

- Relocate the approved location of the GPRS that is to be located on the approved Packing Plant site to the north of Bolong Road; and
- Increase diameter of the pipe to be used in the gas pipeline from DN150 to DN300.

5.1 GAS PRESSURE REDUCTION STATION

Under Concept and Project Approvals MP 10_0144 and MP 10_0108 the Gas Pressure Reduction Station was approved towards the north-eastern boundary of Lot 16 DP 1121337 situated on the northern side of Bolong Road opposite the Shoalhaven Starches factory site. Project Approval MP 06_0228 for the Shoalhaven Starches Expansion Project, approved the construction of a Packing Plant on this same parcel of land. At the time of the approved of Concept and Project Approvals MP 10_0144 & MP 10_0108, the location of the Gas Pressure Reduction Station did not conflict with the siting of the approved Packing Plant.

The GPRS reduces gas pressure, as originally proposed, from roughly 10,000 kPa to 4,000 and 210 kPa as required by the Shoalhaven Starches operations. **Plate 1** below provides a view of a similar facility located on the northern side of Bolong Road adjacent to the BOC CO₂ Plant.



Plate 1: View of existing Gas Pressure Reduction Facility adjacent to CO₂ Plant.

As the Department would be aware, over time the siting and footprint of the Packing Plant has been modified. Furthermore, Shoalhaven Starches have been seeking to undertake further modifications to the approved Packing Plant under Project Approval MP 06_0228 (Mod 21). The modifications that have been approved and which are now proposed for the siting and footprint of the Packing Plant and its associated works now conflict with the approved location of the approved GPRS under Concept and Project Approvals MP10_0144 and MP 10_0108 (refer attached site plan).

To overcome this conflict it is proposed to relocate the approved GPRS towards the southern boundary and set back from the Bolong Road frontage of the site (refer **Figure 5**). This site has been selected as it is the only location that is now free of approved development and upon which the required footprint and configuration of the Gas Pressure Reduction Station can now be sited on this land ; while also enabling suitable proximity and access to the approved Gas Fired Co-generation Plant that the pipeline is to feed.

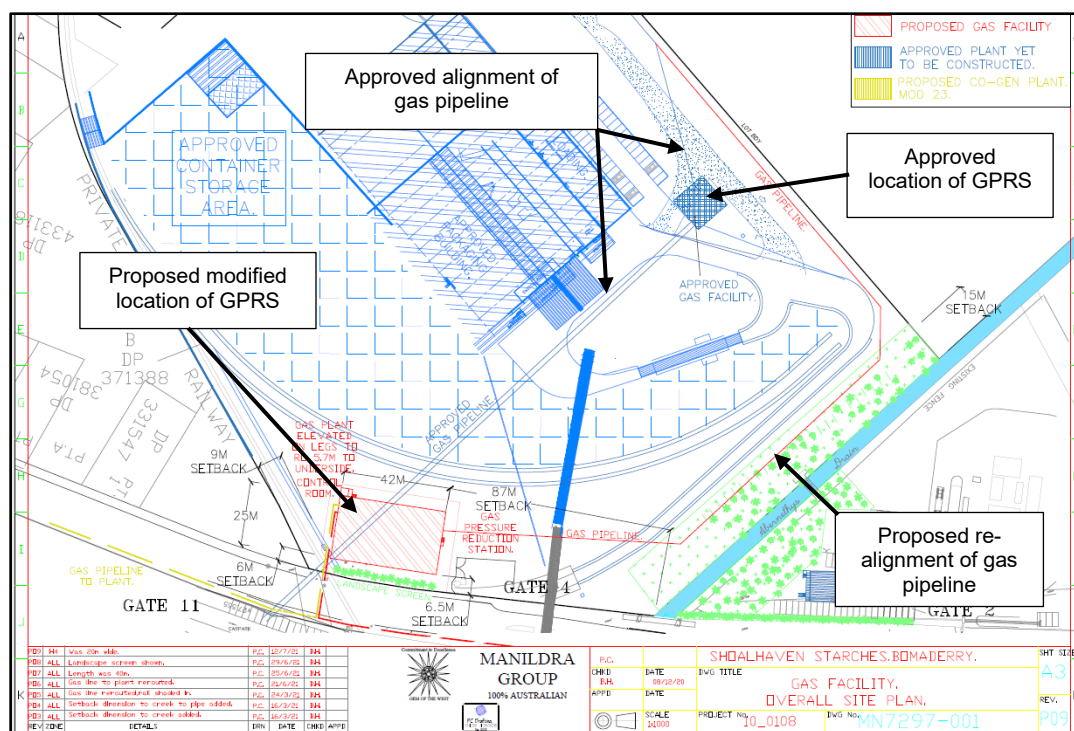


Figure 5: Location of proposed relocated GPRS and pipeline.

The footprint of the GPRS has also been increased from that originally envisaged under the original Project Approval. The footprint of the GPRS will now comprise 42 metres by 25 metres. The increase in footprint is the result of further design work which has further refined the required layout of the GPRS.

Annexure 2 to this Modification Report are plans detailing the proposed modified location of the Gas Pressure Reduction Station.

5.2 DIAMETER OF PIPE

Project Approval MP06_0228 for the Shoalhaven Starches Expansion Project made provision for a gas fired co-generation that would comprise two gas turbine generators that would deliver an anticipated net power output of 40 MW of power for the site.

One of the primary objectives of the Shoalhaven Starches Gas Pipeline Project was to feed the gas fired co-generation plant that was originally approved under MP 06_0228.

At that time the design parameters for the pipe width within the pipeline were defined for the gas requirements for the approved gas fired co-generation plant, and subject to the following parameters:

- Minimum inlet pressure from EGP = 8,800 kPa;
- Minimum allowable pressure at pressure reduction facility = 4,000 kPa;
- Maximum flow = 25 TJ/day.

Based on the above parameters, a pipe diameter width of DN150 pipe was originally considered suitable.

As the Department are aware, Shoalhaven Starches will be seeking approval to modify the approved gas fired co-generation plant under Mod 23. Shoalhaven Starches now propose to construct a new gas-fired co-generation plant which will consist of two natural gas turbines that will generate an anticipated power output each of 30 MW, providing a total power to the site of 60 MW. The gas fired co-generation plant will replace the approved gas fired and coal fired co-generators.

The increase in power output from the approved gas fired co-generator, when modified, will necessitate the design parameters for the design of the pipe within the pipeline to be revised as follows:

- Minimum guaranteed inlet pressure from EGP = 3,500 kPa (which may require a compressor to be installed at the Co-generation Plant);
- Minimum allowable pressure at pressure reduction facility = 4,000 kPa for the turbines and 210 kPa for the dryers and boilers;
- Maximum flow = 45 TJ/day.

Under these circumstances Shoalhaven Starches have identified that the diameter of the pipe will need to be increased to DN300 pipe.

The increase in the diameter of the pipe will not however require any change to the anticipated trench dimensions that were envisaged under the original approvals.

6.0 SECTION 5.25 OF THE EP&A ACT

Concept Plan Approval 10_0144 and Project Approval 10_0108 were transitioned on the 30th April 2021 (Government Gazette 174 – Environment) to the State Significant Infrastructure under clause 5 of Schedule 2 to the *Environmental; Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*.

As State Significant Infrastructure, any modifications are required to obtain approval from the NSW Minister for Planning pursuant to Section 5.25 of the Environmental Planning & Assessment Act.

This application is made pursuant to Section 5.25 of the Environmental Planning & Assessment (EP&A) Act.

Section 5.25 of the EP&A Act reads:

5.25 Modification of Minister's approval (cf previous s 115Z1)

(1) *In this section—*

Minister's approval means an approval to carry out State significant infrastructure under this Division, and includes an approval granted on the determination of a staged infrastructure application.

modification of an approval means changing the terms of the approval, including revoking or varying a condition of the approval or imposing an additional condition on the approval.

(2) *The proponent may request the Minister to modify the Minister's approval for State significant infrastructure. The Minister's approval for a modification is not required if the infrastructure as modified will be consistent with the existing approval under this Division.*

Note—

Section 380AA of the Mining Act 1992 provides that a request for the modification of approval for State significant infrastructure for the mining of coal can only be made by or with the consent of the holder of an authority under that Act in respect of coal and the land concerned.

(3) *The request for the Minister's approval is to be lodged with the Planning Secretary. The Planning Secretary may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*

(4) *The Minister may modify the approval (with or without conditions) or disapprove of the modification.*

This Modification Report has been prepared in accordance with the provisions of Section 5.25 of the EP&A Act.

The Modification Report provides an assessment of the relevant environmental and social impacts associated with the proposed modification to assist the community and government agencies and the approval authority make informed submissions and decision on the merits of this modification.

7.0 STRATEGIC AND STATUTORY CONTEXT

This section of the Modification Report will deal with those strategic and statutory planning provisions that relate to the land associated with this Modification Proposal.

7.1 ENVIRONMENTAL PLANNING INSTRUMENTS

7.1.1 State Environmental Planning Policies

Table 1 details State Environmental Planning Policies (SEPP) that apply to the land and whether they are applicable to the proposal.

Table 1
State Environmental Planning Policies that Apply to the Subject Site

<i>State Environmental Planning Policy</i>	<i>Applicable Yes/No</i>
State Environmental Planning Policy (Affordable Rental Housing) 2009 (pub. 2009-07-31)	No
State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (pub. 2004-06-25)	No
State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (pub. 2008-12-12)	No
State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (pub. 2004-03-31)	No
State Environmental Planning Policy (Infrastructure) 2007 (pub. 2007-12-21)	Yes
State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (pub. 2007-02-16)	No
State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007 (pub. 2007-09-28)	No
State Environmental Planning Policy No 1-Development Standards (pub. 1980-10-17)	No
State Environmental Planning Policy No 21-Caravan Parks (pub. 1992-04-24)	No
State Environmental Planning Policy No 30-Intensive Agriculture (pub. 1989-12-08)	No
State Environmental Planning Policy No 33-Hazardous and Offensive Development (pub. 1992-03-13)	Yes
State Environmental Planning Policy No 36-Manufactured Home Estates (pub. 1993-07-16)	No
State Environmental Planning Policy No 50-Canal Estate Development (pub. 1997-11-10)	No
State Environmental Planning Policy No 55-Remediation of Land (pub. 1998-08-28)	No

Table 1 (continued)

State Environmental Planning Policy	Applicable Yes/No
State Environmental Planning Policy No 62-Sustainable Aquaculture (pub. 2000-08-25)	No
State Environmental Planning Policy No 64-Advertising and Signage (pub. 2001-03-16)	No
State Environmental Planning Policy No 65-Design Quality of Residential Apartment Development (pub. 2002-07-26)	No
State Environmental Planning Policy No 70-Affordable Housing (Revised Schemes) (pub. 2002-05-01)	No
State Environmental Planning Policy (Primary Production and Rural Development) 2019	No
State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017: Subject Land (pub. 2017-08-25)	No
State Environmental Planning Policy (Coastal Management) 2018	Yes

SEPP – Infrastructure

This SEPP aims to facilitate the effective delivery of infrastructure across the state and that appropriate agencies are made aware of and are given an opportunity to make representations in respect of certain development,

Division 12A of the SEPP relates to Pipelines. Clause 66A of the SEPP states:

66A Development permitted without consent

- (1) *Development for the purpose of a pipeline may be carried out by any person without consent on any land if the pipeline is subject to a licence under the Pipelines Act 1967 or a licence or authorisation under the Gas Supply Act 1996.*

Whilst the proposed pipeline will require a licence under either the *Pipelines Act 1967* or the *Gas Supply Act 1996*, such an approval has not yet been issued. Under these circumstances the proposed pipeline is required to obtain consent under Part 5 of the EP&A Act.

Division 17 of the SEPP relates to Road and Traffic infrastructure while Schedule 3 of the SEPP outlines traffic generating development which requires referral to Roads and Maritime Services (RMS). The proposal does not trigger the criteria in this Schedule that would warrant the development application being referred to the RMS, and therefore the provisions of this SEPP would not apply to this proposal.

SEPP No.33 – Hazardous and Offensive Development

The objectives of SEPP No. 33 are set out in clause 2 of the SEPP and include:

- (a) *to amend the definitions of hazardous and offensive industries where used in environmental planning instruments, and*
- (b) *to render ineffective a provision of any environmental planning instrument that prohibits development for the purpose of a storage facility on the ground that the facility is hazardous or offensive if it is not a hazardous or offensive storage establishment as defined in this Policy, and*
- (c) *to require development consent for hazardous or offensive development proposed to be carried out in the Western Division, and*
- (d) *to ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account, and*
- (e) *to ensure that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact, and*
- (f) *to require the advertising of applications to carry out any such development.*

The Modification Proposal is supported by a Preliminary Hazard Analysis prepared by Pinnacle Risk Management Pty Ltd (“Pinnacle Risk:”) in accordance with the provisions of this SEPP (**Annexure 4**). Pinnacle Risk have undertaken a review of the works associated with this current Modification Proposal and assessed and compared the proposed works against relevant risk criteria.

SEPP (Coastal Management) 2018

This SEPP seeks to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016 by:

- a) managing development in the coastal zone and protecting the environmental assets of the coast, and*
- b) establishing a framework for land use planning to guide decision-making in the coastal zone, and*
- c) mapping the 4 coastal management areas which comprise the NSW coastal zone, in accordance with the definitions in the Coastal Management Act 2016.*

This Policy applies to land within the coastal zone. Section 5 of the *Coastal Management Act 2016* provides that the **coastal zone** means the area of land comprised of the following coastal management areas:

- a) the coastal wetlands and littoral rainforests area,
- b) the coastal vulnerability area,

- c) the coastal environment area,
- d) the coastal use area.

Part 2 of the Coastal Management SEPP stipulates the Development Controls for Coastal Management Areas. Division 1 outlines the controls to be applied to development in the Coastal Wetlands and Littoral Rainforests Area.

Coastal Wetlands and Littoral Rainforests Area.

Mapping supporting the SEPP outlines the subject land is not mapped as containing coastal wetlands or littoral rainforest.

Coastal Environment Area

Division 3 of the SEPP stipulates the controls to be applied to development in the Coastal Environment Area.

The subject land is mapped under the NSW Coastal Management SEPP Mapping as being located within the Coastal Environment Area as seen below in **Figure 6**.

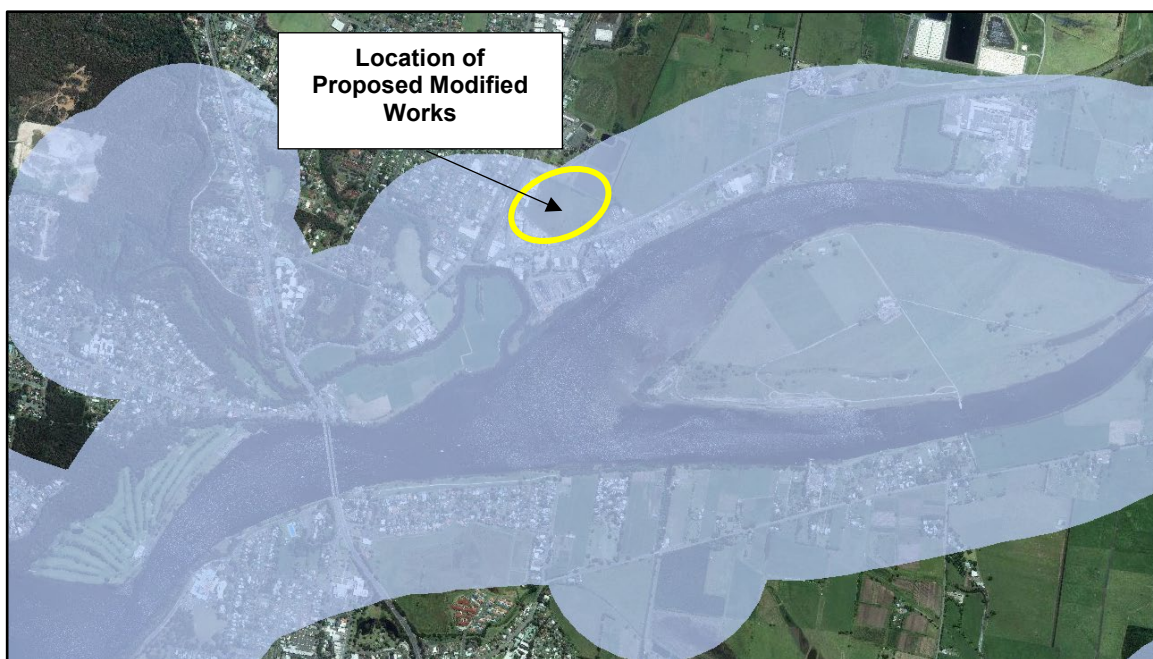


Figure 6: NSW Coastal Management SEPP: Coastal Environment Area Map.

Clause 13 of the SEPP specifies matters that must be considered in determining development applications on land within the Coastal Environment Area. Clause 13 reads:

- 1) *Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following:*

- a) *the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,*
 - b) *coastal environmental values and natural coastal processes,*
 - c) *the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,*
 - d) *marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,*
 - e) *existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,*
 - f) *Aboriginal cultural heritage, practices and places,*
 - g) *the use of the surf zone.*
- 2) *Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:*
- a) *the development is designed, sited and will be managed to avoid an adverse impact referred to in subclause (1), or*
 - b) *if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or*
 - c) *if that impact cannot be minimised—the development will be managed to mitigate that impact.*

Comment:

- The proposal is not near a headland or rock platform and as such does not impact on public access to these areas.
- The proposal will not adversely impact on the visual amenity and scenic qualities of the coast.
- The proposal involves works confined within the existing approved Packing Plant site that is presently under construction. It is unlikely to impact on items of Aboriginal cultural heritage.
- The proposal involves works within the existing approved Packing Plant site that is presently under construction and will not impact upon the integrity or resilience of the biophysical or ecological environment.
- The proposal will incorporate erosion and sediment control measures to minimise impact on the water quality of the adjoining watercourses (refer condition 18 (Schedule 3) of the Project Approval).
- The proposal will not involve any significant adverse impact on marine or native vegetation.

- The proposed development is not located within close proximity to the surf zone and will not impact on coastal environmental values or natural coastal processes.

Coastal Use Area

Division 4 of the SEPP specifies the controls to be applied to development in the Coastal Use Area. The subject land is also partly within the Coastal Use zone as seen below in **Figure 7**. As such the provisions which apply to this mapping are relevant to the proposed development.



Figure 7: NSW Coastal Management SEPP: Coastal Use Area Map.

Clause 14 of the SEPP specifies matters that must be considered in determining development applications on land within the Coastal Use Area. Clause 14 reads:

- (1) *Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:*
 - (a) *has considered whether the proposed development is likely to cause an adverse impact on the following:*
 - (i) *existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,*
 - (ii) *overshadowing, wind funneling and the loss of views from public places to foreshores,*
 - (iii) *the visual amenity and scenic qualities of the coast, including coastal headlands,*
 - (iv) *Aboriginal cultural heritage, practices and places,*
 - (v) *cultural and built environment heritage, and*

(b) *is satisfied that:*

- (i) *the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or*
- (ii) *if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or*
- (iii) *if that impact cannot be minimised—the development will be managed to mitigate that impact, and*

(c) *has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.*

Comment:

- The proposal will not impact on access to the foreshore. The area of the site associated with this Modification Application is not near a beach, headland or rock platform and as such does not impact on public access to these areas.
- The works associated with this Modification Proposal will not cause overshadowing of the foreshore area or wind funnelling; nor will they block views from public places. The proposal will not adversely impact on the visual amenity and scenic qualities of the coast.
- As detailed above, the proposal will not adversely impact on Aboriginal cultural heritage and places.
- The works associated with this Modification Proposal are of a bulk, scale and size that are consistent with existing industrial development within the existing industrial site and that which has already been approved on the subject site and will not create an adverse visual impact in this locality.

Under these circumstances the proposal is considered to be consistent with the objectives

7.1.2 Local Environmental Plan

Shoalhaven Local Environmental Plan 2014

The parcels of land associated with this Modification Application are zoned IN1 General Industrial under the provisions of the Shoalhaven LEP 2014 (refer **Figure 8**).

Table 2
Land Use Permissibility – IN1 Zone (Shoalhaven LEP 2014)

Permitted without consent	Nil.
Permitted with consent	Bulky goods premises; Depots; Freight transport facilities; General industries ; Industrial training facilities; Kiosks; Light industries; Markets; Neighbourhood shops; Roads; Take away food and drink premises; Timber yards; Warehouse or distribution centres
Prohibited	Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Camping grounds; Caravan parks; Cemeteries; Charter and tourism boating facilities; Child care centres; Correctional centres; Crematoria; Eco-tourist facilities; Educational establishments; Environmental facilities; Exhibition villages; Extractive industries; Farm buildings; Forestry; Function centres; Health services facilities; Highway service centres; Home-based childcare; Home businesses; Home occupations; Home occupations (sex services); Information and education facilities; Marinas; Mooring pens; Moorings; Office premises; Open cut mining; Places of public worship; Registered clubs; Residential accommodation; Respite day care centres; Restricted premises; Retail premises; Sex services premises; Tourist and visitor accommodation; Water recreation structures; Wharf or boating facilities.

The SLEP 2014 also has a number of specific provisions that apply to the land. The implications that these provisions have in relation to this proposal are discussed in **Table 3** below:

Table 3
Shoalhaven Local Environment Plan Provisions

SLEP 2014 Clause	Provisions	Comments
<i>Clause 4.3 Height of Buildings</i>	(1) <i>The objectives of this clause are as follows:</i> (a) <i>to ensure that buildings are compatible with the height, bulk and scale of the existing and desired future character of a locality,</i> (b) <i>to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development,</i> (c) <i>to ensure that the height of buildings on or in the vicinity of a heritage item or within a heritage conservation area respect heritage significance.</i> (2) <i>The height of a building on any land is not to exceed the maximum height shown for the land on the Height of Buildings Map.</i> (2A) <i>If the Height of Buildings Map does not show a maximum height for any land, the height of a building on the land is not to exceed 11 metres.</i>	Although there is no maximum height specified for the subject land, Clause 4.3(2A) imposes a maximum building height of 11 m where no specific height limit is designated. Four (4) flues associated with the proposed GPRS will have a maximum height above ground level of 11 m above ground level and will therefore comply with this requirement.
<i>Clause 5.10 Heritage Conservation</i>	(1) <i>The objectives of this clause are:</i> (a) <i>to conserve the environmental heritage of Shoalhaven; and</i> (b) <i>to conserve the heritage significance of heritage items and heritage conservation areas including associated fabric, settings and views; and</i> (c) <i>to conserve archaeological sites; and</i> (d) <i>to conserve Aboriginal objects and Aboriginal places of heritage significance.</i> (2) <i>Development consent is required for any of the following:</i> (a) <i>demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):</i> (i) <i>a heritage item,</i> (ii) <i>an Aboriginal object</i> (iii) <i>a building, work, relic or tree within a heritage conservation area,</i>	There are no heritage items within the subject land, and the subject site is not located within a heritage conservation area.

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments						
5.10 continued	(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item, (c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being, discovered, exposed, moved damaged or destroyed, (d) disturbing or excavating an Aboriginal place of heritage significance, (e) erecting a building on land: (i) on which a heritage item is located or that is within a heritage conservation area; (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance, (f) subdividing land: (i) on which a heritage item is located or that is within a heritage conservation area, or (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.							
Clause 7.1 Acid sulphate soils	(1) The objective of this clause is to ensure that development does not disturb, expose or drain acid sulphate soils and cause environmental damage. (2) Development consent is required for the carrying out of works described in the Table to this subclause on land shown on the Acid Sulphate Soils Map as being of the class specified for those works, except as provided by this clause. <table><tr><th>Class of Land</th><th>Works</th></tr><tr><td>1</td><td>Any works.</td></tr><tr><td>2</td><td>Works below the natural ground surface. Works by which the watertable is likely to be lowered.</td></tr></table>	Class of Land	Works	1	Any works.	2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.	Condition 19 (Schedule 3) of the Project Approval required an Acid Sulphate Soils Management Plan be formulated for the project. An ASS assessment has been undertaken in relation to the relocated GPRS and pipeline within this site associated with this Modification Proposal by GHD (Annexure 5). This issue is further addressed in Section 7.2.5 of this Modification Report.
Class of Land	Works							
1	Any works.							
2	Works below the natural ground surface. Works by which the watertable is likely to be lowered.							

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments						
7.1 continued	<table><tr><td>3</td><td>Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.</td></tr><tr><td>4</td><td>Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.</td></tr><tr><td>5</td><td>Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.</td></tr></table> (3) Development consent must not be granted under this clause for the carrying out of works unless an acid sulphate soils management plan has been prepared for the proposed works in accordance with the Acid Sulphate Soils Manual and has been provided to the consent authority. (4) Despite subclause (2), development consent is not required under this clause for the carrying out of works if: (a) a preliminary assessment of the proposed works prepared in accordance with the Acid Sulphate Soils Manual indicates that an acid sulphate soils management plan is not required for the works, and (b) the preliminary assessment has been provided to the consent authority and the consent authority has confirmed the assessment by notice in writing to the person proposing to carry out the works. (5) Despite subclause (2), development consent is not required under this clause for the carrying out of any of the following works by a public authority (including ancillary work such as excavation, construction of access ways or the supply of power): (a) emergency work, being the repair of the works of the public authority required to be carried out urgently because the works have been damaged, have ceased to function or pose a risk to the environment or to public health and safety,	3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.	4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.	5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.	
3	Works more than 1 metre below the natural ground surface. Works by which the watertable is likely to be lowered more than 1 metre below the natural ground surface.							
4	Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.							
5	Works within 500 metres of adjacent Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.							

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.1 continued	(b) routine management work, being the periodic inspection, cleaning, repair or replacement of the works of the public authority (other than work that involves the disturbance of more than 1 tonne of soil). (c) minor work, being work that costs less than \$20,000 (other than drainage work). (6) Despite subclause (2), development consent is not required under this clause to carry out any works if: (a) the works involve the disturbance of less than 1 tonne of soil, and (b) the works are not likely to lower the watertable.	
Clause 7.3 Flood Planning	(1) The objectives of this clause are as follows: (a) to minimise the flood risk to life and property associated with the use of land, (b) to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change, (c) to avoid significant adverse impacts on flood behaviour and the environment. (2) This clause applies to land at or below the flood planning level. (3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development: (a) is compatible with the flood hazard of the land, and (b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and (c) incorporates appropriate measures to manage risk to life from flood, and (d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of riverbanks or watercourses, and	The application is supported by a Flood Hazard Analysis prepared by WMAwater (Annexure 3). This issue is further addressed in Section 7.2.3 of this Modification Report.

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.3 continued	(e) <i>is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding, and</i> (f) <i>will not affect the safe occupation or evacuation of the land.</i> (4) <i>A word or expression used in this clause has the same meaning as it has in the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005, unless it is otherwise defined in this Plan.</i> (5) <i>(Repealed)</i>	
Clause 7.4 Coastal Risk Planning	(1) <i>The objectives of this clause are as follows:</i> (a) <i>to avoid significant adverse impacts from coastal hazards,</i> (b) <i>to ensure uses of land identified as coastal risk are compatible with the risks presented by coastal hazards,</i> (c) <i>to enable the evacuation of land identified as coastal risk in an emergency,</i> (d) <i>to avoid development that increases the severity of coastal hazards.</i> (2) <i>This clause applies to the land identified as “Coastal Risk Planning Area” on the Coastal Risk Planning Map.</i> (3) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:</i> (a) <i>will avoid, minimise or mitigate exposure to coastal processes, and</i> (b) <i>is not likely to cause detrimental increases in coastal risks to other development or properties, and</i> (c) <i>is not likely to alter coastal processes and the impacts of coastal hazards to the detriment of the environment, and</i> (d) <i>incorporates appropriate measures to manage risk to life from coastal risks, and</i> (e) <i>is likely to avoid or minimise adverse effects from the impact of coastal processes and the exposure to coastal hazards, and</i>	The <i>Coastal Risk Planning Map</i> that accompanies the SLEP 2014 does <u>not</u> identify the subject land as a “<i>Coastal Risk Planning Area</i>”. The provisions of this clause therefore do not apply to the subject site.

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.4 continued	(f) provides for the relocation, modification or removal of the development to adapt to the impact of coastal processes and coastal hazards, and (g) has regard to the impacts of sea level rise. (4) A word or expression used in this clause has the same meaning as it has in the NSW Coastal Planning Guideline: Adapting to Sea Level Rise (ISBN 978-1-74263-035-9) published by the NSW Government in August 2010, unless it is otherwise defined in this clause. (5) In this clause: coastal hazard has the same meaning as in the Coastal Protection Act 1979.	
Clause 7.5 Terrestrial Biodiversity	(1) The objective of this clause is to maintain terrestrial biodiversity, by: (a) protecting native flora and fauna, (b) protecting the ecological processes necessary for their continued existence, and (c) encouraging the recovery of native flora and fauna, and their habitats. (2) This clause applies to land: (a) identified as “Biodiversity—habitat corridor” or “Biodiversity—significant vegetation” on the Terrestrial Biodiversity Map, and (b) situated within 40m of the bank (measured horizontally from the top of the bank) of a natural waterbody. (3) Before determining a development application for development on land to which this clause applies, the consent authority must consider: (a) whether the development is likely to have: (i) any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and (ii) any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and (iii) any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and	The Terrestrial Biodiversity Map that accompanies the SLEP 2014 does <u>not</u> identify the subject land as including areas of Biodiversity - habitat corridor and/or Biodiversity - significant vegetation. Given the developing industrial nature of the site the proposal is unlikely to have any adverse impacts on the ecological value of the land.

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.5 continued	(iv) any adverse impact on the habitat elements providing connectivity on the land, and (b) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development. (4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that: (a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or (b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or (c) if that impact cannot be minimised—the development will be managed to mitigate that impact. (5) For the purpose of this clause: bank means the limit of the bed of a natural waterbody. bed, of a natural waterbody, means the whole of the soil of the channel in which the waterbody flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the waterbody at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.	
Clause 7.6 Riparian land and watercourses	(1) The objective of this clause is to protect and maintain the following: (a) water quality within watercourses, (b) the stability of the bed and banks of watercourses, (c) aquatic and riparian habitats, (d) ecological processes within watercourses and riparian areas. (2) This clause applies to all of the following: (a) land identified as “Riparian Land” on the Riparian Lands and Watercourses Map, (b) land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map,	The <i>Riparian Lands and Watercourses Map</i> that accompanies the SLEP 2014 identifies a category 2 watercourse Abernethy’s Creek flowing along the eastern boundary of the subject site. The proposed relocated pipeline associated with this Modification Application will be sited 15 metres from the banks of Abernethy’s Creek. Condition 18 (Schedule 3) of the Project Approval already requires the preparation and implementation of a Soil & Water Management Plan for the approved Project. The modified works associated with this Modification Application will be subject to this requirement. This will

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.6 continued	(c) <i>all land that is within 50 metres of the top of the bank of each watercourse on land identified as “Watercourse Category 1”, “Watercourse Category 2” or “Watercourse Category 3” on that map.</i> (3) <i>Before determining a development application for development on land to which this clause applies, the consent authority must consider:</i> (a) <i>whether or not the development is likely to have any adverse impact on the following:</i> (i) <i>the water quality and flows within the watercourse,</i> (ii) <i>aquatic and riparian species, habitats and ecosystems of the watercourse,</i> (iii) <i>the stability of the bed and banks of the watercourse,</i> (iv) <i>the free passage of fish and other aquatic organisms within or along the watercourse,</i> (v) <i>any future rehabilitation of the watercourse and its riparian areas, and</i> (b) <i>whether or not the development is likely to increase water extraction from the watercourse, and</i> (c) <i>any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</i> (4) <i>Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:</i> (a) <i>the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or</i> (b) <i>if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or</i> (c) <i>if that impact cannot be minimised—the development will be managed to mitigate that impact</i>	ensure the modified project will be carried out such that it will not result in adverse impact on local watercourses. An assessment has been undertaken by GHD in relation to riverbank stability and Abernethy’s Creek (Annexure 5). This issue is further addressed in Section 7.2.4 of this report. In terms of the impacts on the stability of the banks of Abernethy’s Creek, GHD’s assessment identifies the factor of safety in respect to the stability of the creek bank, following excavation of 1 m deep trench for the gas pipeline construction, in conjunction with the rail and Packing Plant development is acceptable for the long-term condition, and therefore will not influence the stability of the western bank of Abernethy’s Creek

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
	(5) <i>For the purpose of this clause:</i> bank means the limit of the bed of a watercourse. bed, of a watercourse, means the whole of the soil of the channel in which the watercourse flows, including the portion that is alternatively covered and left bare with an increase or diminution in the supply of water and that is adequate to contain the watercourse at its average or mean stage without reference to extraordinary freshets in the time of flood or to extreme droughts.	
Clause 7.7 Landslide risk and other land degradation	(1) <i>The objective of this clause is to maintain soil resources and the diversity and stability of landscapes, including protecting land:</i> (a) comprising steep slopes, and (b) susceptible to other forms of land degradation. (2) <i>This clause applies to the following land:</i> (a) land with a slope in excess of 20% (1:5), as measured from the contours of a 1:25,000 topographical map, and (b) land identified as “Sensitive Area” on the Natural Resource Sensitivity—Land Map. (3) <i>Before determining a development application for development on land to which this clause applies, the consent authority must consider any potential adverse impact, either from, or as a result of, the development in relation to:</i> (a) the geotechnical stability of the site, and (b) the probability of increased erosion or other land degradation processes. (4) <i>Before granting consent to development on land to which this clause applies, the consent authority must be satisfied that:</i> (a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or (b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or	The proposed works involve land that is only partly identified as sensitive land under the SLEP 2014 mapping. In this regard the land upon which the proposed GPRS and relocated pipeline are to be located are not affected by these provisions (Figure 9).  Figure 9: Extract Natural Resource Sensitivity Mapping SLEP 2014

Table 3 (continued)

SLEP 2014 Clause	Provisions	Comments
7.7 continued	(c) if that impact cannot be minimised – the development will be managed to mitigate that impact. (5) In this clause, topographical map means the most current edition of a topographical map, produced by Land and Property Information division of the Department of Finance and Services, that identifies the Council's local government area and boundary.	
7.8 Scenic protection	(1) The objective of this clause is to protect the natural environmental and scenic amenity of land that is of high scenic value. (2) This clause applies to land identified as "Scenic Protection" on the Scenic Protection Area Map. (3) In deciding whether to grant development consent for development on land to which this clause applies, the consent authority must: (a) consider the visual impact of the development when viewed from a public place and be satisfied that the development will involve the taking of measures that will minimise any detrimental visual impact, and (b) consider the number, type and location of existing trees and shrubs that are to be retained and the extent of landscaping to be carried out on the site, and (c) consider the siting of the proposed buildings.	The subject land is <u>not</u> identified as being within a "Scenic Protection" area by <i>Scenic Protection Area Mapping</i> that accompanies the SLEP 2014. The provisions of this clause therefore do not apply to the subject site. The visual impact associated with this proposal are discussed in Section 7.2.7 of this Modification Report.

7.1.3 Development Control Plans (DCP) and Policies

Shoalhaven Development Control Plan (DCP) 2014

Given the nature of the works associated with this modification proposal it is considered the provisions of the Shoalhaven DCP 2014 are not directly relevant to this modification application apart from the provisions of *Chapter G9: Development on Flood Prone Land*.

The Modification Report is supported by a Flood Hazard Analysis prepared by WMAwater which addresses flooding issues which arise in relation to this Modification Proposal. A copy of the WMAwater submission is included in **Annexure 3** of this report. Flooding issues are addressed further in Section 7.2.3 of this report.

Table 4 below is an extract from the WMAwater submission addressing the relevant provisions (section 5.1) of Chapter G9 of the Shoalhaven DCP 2014.

Table 4
Performance Criteria – General (Section 5.1 DCP 2014)
Extract from WMAwater Flood Compliance Report

<i>Performance Criteria</i>	<i>Response</i>
P1 Development or work on flood prone land will meet the following:	
<i>The development will not increase the risk to life or safety of persons during a flood event on the development site and adjoining land.</i>	No additional workers will be on the site as a result of the proposed works.
<i>The development or work will not unduly restrict the flow behaviour of floodwaters.</i>	Refer Hydraulic Impact Assessment.
<i>The development or work will not unduly increase the level or flow of floodwaters or stormwater runoff on land in the vicinity.</i> <i>The development or work will not exacerbate the adverse consequences of floodwaters flowing on the land with regard to erosion, siltation and destruction of vegetation.</i>	The proposed GPRS is within existing built-up industrial land with minimal vegetation on the site. All runoff under existing and future conditions will reach the ground in nearly identical locations and thus the works will have no impact on erosion or siltation. The pipeline is located underground within rural lands. During the construction phase there is the potential for erosion, siltation and destruction of vegetation. These issues will need to be addressed in the EA for the construction phase.
<i>The structural characteristics of any building or work that are the subject of the application are capable of withstanding flooding in accordance with the requirements of the Council.</i>	A separate structural report on the potential failure of existing buildings and stored equipment and product will be provided.
<i>The development will not become unsafe during floods or result in moving debris that potentially threatens the safety of people or the integrity of structures.</i>	A separate structural report on the potential failure of existing buildings and stored equipment and product will be provided.

Table 4 (continued)

Performance Criteria	Response
<i>Potential damage due to inundation of proposed buildings and structures is minimised.</i>	Inundation of the site and the proposed plant and / or debris impact may cause damage to electrical and other components feeding the equipment as well as damage to the plant itself. These issues will be considered in an updated Shoalhaven Starches Flood Plan taking into account the proposed works.
<i>The development will not obstruct escape routes for both people and stock in the event of a flood.</i>	The proposed works will not occupy escape routes or cause workers to become trapped.
<i>The development will not unduly increase dependency on emergency services.</i>	The works will not increase the number of workers from Shoalhaven Starches who may be subject to flood risk as a result of the proposed works.
<i>Interaction of flooding from all possible sources has been taken into account in assessing the proposed development against risks to life and property resulting from any adverse hydraulic impacts.</i>	Refer Hydraulic Impact Assessment below.
<i>The development will not adversely affect the integrity of floodplains and floodway's, including riparian vegetation, fluvial geomorphologic environmental processes and water quality.</i>	The works will be constructed on land that is largely designated as high hazard flood storage in the 1% AEP event. Following construction of the pipeline there will be nil adverse affectation on the land above. The site of the GPRS is industrial land with limited existing vegetation and is beyond the influence of normal fluvial geomorphic processes. The works will have no impact on water quality.

7.1.4 Protection of the Environment Operations Act and Associated Regulations

The existing Shoalhaven Starches factory site and Environmental Farm are subject to an Environmental Protection Licence (EPL) under the Protection of the Environment Operations Act 1997 (POEO Act) (EPL No. 883) issued by the EPA. The licence imposes requirements in terms of:

- discharges to air, water and land;
- irrigation controls;
- management of irrigation;
- maintenance of irrigation reticulation;
- odour control;
- noise.

Schedule 1 of the POEO legislation does not require pipelines to be licensed.

The EPA have been consulted with respect to the preparation of this Modification Report. The EPA's comments in relation to this Modification Application are addressed in Section 4.0 of this report. The EPA have not raised any specific additional issues in relation to the Shoalhaven Starches EPL in relation to this proposal.

7.2 THE LIKELY IMPACTS OF THE DEVELOPMENT, INCLUDING ENVIRONMENTAL IMPACTS ON BOTH NATURAL AND BUILT ENVIRONMENTS, AND SOCIAL AND ECONOMIC IMPACTS IN THE LOCALITY

7.2.1 Risk Assessment of Potential Environmental Impacts

The purpose of this section of the Modification Report is to provide a risk assessment of the potential environmental impacts associated with the modification proposal. This section (**Table 5**) compares the potential impacts from the proposed modification against the approved project. The comparison uses the key environmental impacts assessed in the original EA that supported the original Concept Approval MP 10_0144 and Concept Approval MP 10_0108 and summarises the relative change in environmental impacts associated with the proposed modification.

Table 5
Risk Assessment

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Air Quality (including Odour) Assessment		
GPRS The original EA for the Shoalhaven Starches Gas Pipeline Project was supported by an Air Quality Impact Assessment carried out by Stephenson Environmental Management (SEMA). With respect to the Gas Pressure Reduction facility, SEMA outlined that as the purpose of the facility is to reduce gas pressure from approximately 10,000 kPa to 4,000 kPa, the pressure reduction results in a significant drop in gas temperature. Therefore, in order to prevent liquids forming in the gas stream, two gas heaters are utilised, which emits mainly oxides of nitrogen and carbon dioxide. The gas heaters, according to SEMA, will be similar to the existing EVO Energy gas heater approximately 500 metres to the east along Bolong Road. According to SEMA, operational procedures for the pressure reduction facility seek to minimise fugitive discharge of natural gas from the pipeline at all times. EVO Energy confirmed that this facility is for pressure reduction purposes rather than as an emergency gas pressure release to atmosphere or as a flare. The natural gas contained in the pressure reduction facility is the product for which EVO Energy receives revenue for conveying intact inside the pipe and not releasing to atmosphere. Therefore, according to SEMA, the small amount of gas that would ever be released from this facility during a maintenance procedure would be considered a negligible emission. When this emission is combined with the remote location and prevailing winds SEMA were of the view that it	No additional management or mitigative measures are required for this Modification Application.	Not a key issue. This issue is not further addressed in this Modification Report.

Table 5 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
would be considered to have a minimal impact on air quality in the immediate area; and no regional greenhouse gas emission impacts. The gas heater that is used to prevent liquids forming in the gas stream will be a bath type and installed just upstream of the pressure reduction skid. According to SEMA, the emissions from the gas heaters will be relatively minor by comparison to the existing emission from the Shoalhaven Starches factory site and vehicle traffic. These emissions combined with the remote location and prevailing winds are anticipated to have negligible impact on the air quality in the area. Given these circumstance this Modification Proposal seeks to simply relocate the GPRS within the subject site and will therefore not result in any additional air quality impacts. It is therefore considered that this issue does not require further consideration as part of the Modification Application. <i>Gas Pipe Dimensions</i> The increase in the diameter of the gas pipe design parameters associated with the Modification Application as outlined above will not require any change to the dimensions of the within which the pipeline is to be laid. Under these circumstances the extent of works to excavate and lay the gas pipeline will not change from that originally approved. According to SEMA the most significant types of emissions to air during construction of pipeline Condition 20, 21 and 22 of the Project Approval requires the Proponent to implement all reasonable and feasible measures during the construction and operation of the project to minimise site odour, fume and dust emissions to ensure air emissions are no greater than that predicted in the EA.		

Table 5 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Furthermore, such measures were to be documented in Construction Environmental Management Plan for the project under condition 1 of Schedule 4 of the Project Approval. Given the slight increase in the diameter of the pipe will not have any subsequent need to alter the dimensions of the trench, and thereby extent of excavations and works to lay the pipeline, it is considered this aspect of the Modification Proposal will also result in any additional air quality issues that were not considered as part of the original Project Approval. It is therefore considered that this issue does not require further consideration as part of the Modification Application.		
Transport and Traffic		
The EA for the original Project was supported by a Traffic Impact Statement prepared by Stapleton Transportation & Planning (STAP). The Traffic Impact Statement primarily focussed on the traffic impacts associated with the construction process for the project. The Traffic Impact Statement recommended that a Traffic Management Plan be developed for the project and which would formulate mitigation strategies that would maximise the safety and efficiency of the pipeline construction. Conditions 29 and 30 (Schedule 3) of the Project Approval addressed traffic management and included a requirement for the formulation of a Traffic Management Plan for the project. The proposed modifications will not alter the traffic aspects of the original project or Project Approval. It is considered conditions 29 and 30 will be sufficient to address any traffic issues arising from this Modification Proposal. Under these circumstances traffic is not considered to be an issue that requires further consideration as part of the Modification Application.	No additional management or mitigative measures are proposed in terms of traffic or car parking.	Not a key issue. This issue is not further addressed in this Modification Report.

Table 5 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Site Contamination		
The report is supported by a report prepared by GHD which includes a site contamination assessment (Annexure 5). Based previous and current investigation results, GHD indicate the likelihood for contamination to exist at the site is assessed as low. GHD conclude no further investigation is warranted.	Although the likelihood for contamination was assessed as low, GHD recommend that a Construction Environmental Management Plan (CEMP) be prepared to manage the occurrence of potential contamination, buried waste, demolition waste, ACM, etc. in all parts of the site during construction. The CEMP should also include an Unexpected Finds Protocol (UFP).	This issue is further addressed in Section 7.2.6 this Modification Report.
Acid Sulphate Soils		
Condition 19 (Schedule 3) of the Project Approval required an Acid Sulphate Soils Management Plan be formulated for the project. The proposed increase in the diameter of the pipe will have no effect on the dimensions of the proposed pipeline trench. It is therefore considered this aspect will raise no further concerns in terms of ASS that cannot be dealt with by the existing requirement for an Acid Sulphate Soils Management Plan that is to be formulated for this project The location of the relocated GPRS, and the associated relocation of the pipeline route within this specific site, however, has not been the subject of previous consideration in terms of ASS. Under these circumstances it was considered prudent that a preliminary ASS assessment be undertaken for the location of the relocated GPRS and its associated relocated pipeline route within this site associated with this Modification Proposal. GHD have been engaged to undertake a preliminary ASS assessment of the works associated with this Modification Application (Annexure 5). GHD conclude that ASS are likely to be encountered within the proposed packing plant site, particularly the lower lying areas,	GHD recommend that an ASS management plan (ASSMP) should be prepared to appropriately manage the disturbance of ASS and mitigating potential acid generation and impacts to groundwater and adjacent waterbodies.	This issue is further addressed in Section 7.2.5 of this Modification Report.

Table 5 (continued)

Relative Change in Environmental Impact	Additional Management or Mitigation Measures Required	Significance of Issue with this Modification Proposal
in the north and east. Soft to very soft soils were encountered approximately 15 m west of Abernethy's Creek, to depths between 4.0 m and 9.8 m bgl. The clays were estuarine and described as dark grey high plasticity with silts, sands and shell fragments. The eastern and north-eastern portion of the proposed gas pipeline passes through these soft soil areas and likely to intercept ASS, and groundwater.		
Noise		
The EA for the original Project was supported by a Construction Noise and Vibration Management Plan prepared by Day Design Pty Ltd. The Construction Noise and Vibration Plan prepared by DD concluded: <i>"The predicted level of noise emission from the construction activities is likely to be in excess of the noise management levels, at least on some occasions. Provided the recommendations in Section 7 of this report are implemented and adhered to, the level of noise and vibration from the construction works for the Shoalhaven Starches Gas Pipeline Project will be minimised in accordance with the NSW Office of Environment and Heritage's Interim Construction Noise Guideline and Australian Standard AS2436 – 2010 as detailed in Section 5 of this report."</i> Conditions 8 – 14 of the Project Approval stipulate a range of requirements in terms of the management of noise and vibration associated with the project. Furthermore, such measures will need to be documented in Construction Environmental Management Plan for the project under condition 1 of Schedule 4 of the Project Approval.	No additional management or mitigative measures are proposed in terms of this issue.	Not a key issue. This issue is not further addressed in this Modification Report.

Table 5 (continued)

Relative Change in Environmental Impact	Additional Management or Mitigation Measures Required	Significance of Issue with this Modification Proposal
Given the slight increase in the diameter of the pipe will not alter the dimensions of the trench, and thereby extent of excavations and works to lay the pipeline, it is considered this aspect of the Modification Proposal will not result in any additional noise issues that were also not already considered as part of the original Project Approval. It is therefore considered that this issue does not require further consideration as part of the Modification Application.		
Hazards		
The Modification Application is supported by a Preliminary Hazard Analysis (PHA) prepared by Pinnacle Risk Management which assesses the risks associated with the proposed modifications and compares against relevant risk criteria. The PHA demonstrates the Modification Proposal will comply with all risk criteria. The PHA also concludes that societal risk, area cumulative risk and environmental risk will be acceptable.	The PHA prepared by Pinnacle Risk makes no recommendations in relation to this Modification proposal.	The Modification Report is supported by a PHA prepared by Pinnacle Risk Management addressing this issue (Annexure 4). This issue is further addressing Section 7.2.2. of this Report.
Flooding		
The subject site is inundated during the 1% Annual Exceedance Probability (AEP) flood event by floodwaters from the Shoalhaven River. This Modification Application is supported by an assessment submission prepared by WMAwater ("WMA") (Annexure 5). The submission prepared by WMAwater concludes that: <i>The increase in diameter of the pipe will have no impact on flooding as the pipe is underground and it is only during the construction phase that consideration is required for the potential impacts on the environment and during flood events.</i>	No additional management or mitigation measures proposed.	The Modification Report is supported by a submission prepared by WMAwater addressing this issue (Annexure 3). This issue is further addressing Section 7.2.3 of this Report.

Table 5 (continued)

Relative Change in Environmental Impact	Additional Management or Mitigation Measures Required	Significance of Issue with this Modification Proposal
Construction of the GPRF should have negligible impact on flooding as the plant is constructed on piers as shown in Image 2, thus resulting in minimal loss of temporary floodplain storage or conveyance. However, this assessment should be reviewed once final design plans of the GPRF become available.		
Waste Management		
The proposed modifications will not alter the way waste is managed on the site. The site is already subject to an existing Waste Management Plan prepared in accordance with the original Project Approval.	No additional management or mitigation measures proposed, although any approval for this Modification Application should require the existing Waste Management Plan to be revised to incorporate the elements that form part of this Modification Application.	Not a key issue. This issue is not further addressed in this Modification Report.
Soil & Water Management		
Condition 18 (Schedule 3) of the original Project Approval requires the preparation and implementation of a Soil and Water Management Plan (SS&WMP) for the project. The S&WMP is required to be prepared in consultation with both Council and the NSW Office of Water. Furthermore the S&WMP is required to be documented in the projects Construction Environmental Management Plan (condition 1 (Schedule 4) under the Project Approval. The proposed modified works associated with this Modification Application will need to be addressed as part of S&WMP. Under these circumstances the Project Approval already makes provision for the implementation of feasible and reasonable sediment and erosion control measures to ensure the proposed approved works (as modified) will not cause pollution of waters in conjunction with this project.	No additional management or mitigation measures proposed.	Not a key issue. This issue is not further addressed in this Modification Report.

Table 5 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Visual Impact		
The Shoalhaven Starches factory site is situated on Bolong Road, the gateway to Bomaderry, within an area currently containing predominantly industrial land uses, although lands to the north have a rural character. These different land uses contrast with each other and result in a mixed visual character. The rural areas, much of which comprises the Shoalhaven Starches Environmental Farm, are generally flat to gently undulating and planted with pasture grasses. These areas have a typical rural/agricultural character, common throughout the region. To the north and forming a background to the rural landscape are the timbered slopes of the Cambewarra escarpment. The Shoalhaven Starches factory complex is characterised by typical industrial structures with an overall bulk and scale that dominates the surrounding locality. The factory complex, despite being partially screened by vegetation along Bolong Road, the Shoalhaven River and Abernathy's Creek visually dominates the locality. The overall complex is particularly exposed to view along Bolong Road. The proposal development will be visible from Bolong Road although situated between industrial buildings of similar scale namely the recently completed Starches Dryer building and the existing packing plant adjacent to Bolong Road. Overall the appearance of the site is typical of an industrial facility of this nature. Given the Gas Pipeline Project involves the laying of a pipeline below ground level the EA for the original Project did not envisage the visual impact of the Project would raise significant issues. In this regard condition 32 (Schedule 3) of the Project Approval simply required that during the life of the	This Modification Report recommends that additional landscape screening be undertaken along the frontage of the development site to Bolong Road to minimise the visual impact of the proposed GPRS.	The visual impacts associated with this modification proposal are addressed in Section 7.2.7 of this Modification Report.

Table 5 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
project that the Proponent shall mitigate the visual impacts of the project in such a manner that it does not create nuisance to surrounding properties or the public road network. The relocation of the GRPS from its original approved position towards the north-eastern boundary of Lot 16 DP 1121337 to a position within closer proximity of Bolong Road however will result in a change to the visual impact of the original Project when compared to that considered as part of the Project Approval. Section 7.2.7 of this report includes an assessment of the visual impacts of the proposed modification proposal. This assessment concludes the Modification proposal will not result in any significant adverse visual impacts to the broader landscape.		
Flora and Fauna		
Conditions 23 and 24 of the original Project Approval make provision for the minimising of vegetation clearing associated with this Project. Furthermore these conditions also make provision for the rehabilitation of riparian vegetation that may be disturbed by the construction of the project. The areas of the site associated with the modification works are devoid of native vegetation. It is not envisaged that the works associated with this Modification Application will result in any additional significant impacts on flora and fauna.	No additional management or mitigation measures proposed.	Not a key issue. This issue is not further addressed in this Modification Report.

Table 5 (continued)

<i>Relative Change in Environmental Impact</i>	<i>Additional Management or Mitigation Measures Required</i>	<i>Significance of Issue with this Modification Proposal</i>
Heritage and Archaeological		
The original project application was supported by an Aboriginal Cultural Heritage Assessment prepared by Kyandel Archaeological Services. This assessment concluded all sections of the present study area are free from archaeological constraints and do not require further archaeological assessment. Condition 31 of the Project Approval requires that the proponent prepare: • Heritage training and induction processes; and • Procedures with dealing with heritage items. The areas of the site associated with this Modification Proposal have been subject to previous assessments both in terms of this Concept Approval as well as the Concept Approval for the Shoalhaven Starches Expansion Project. It is not envisaged that this Modification Proposal will adversely impact any heritage or Archaeological items.	No additional management or mitigation measures proposed.	Not a key issue. This issue is not further addressed in this Modification Report.

7.2.2 Preliminary Hazard Analysis

Pinnacle Risk Management were engaged to undertake a Preliminary Hazard Analysis (PHA) for the proposed modifications associated with this Modification Application (**Annexure 4**). A copy of Pinnacle Risk Management's findings as a result of this review is included as **Annexure 4** to this Modification Report. This section of the Modification Report provides a summary of the findings of the Preliminary Hazard Analysis prepared by Pinnacle Risk Management for this Modification Application.

The main aims of the PHA prepared by Pinnacle Risk Management:

- *Identify the credible, potential hazardous events associated with the proposed modifications, i.e. the relocation of the GPRF and the pipeline diameter increase;*
- *Evaluate the level of risk associated with the identified potential hazardous events to surrounding land users and compare the calculated risk levels with the risk criteria published by the DoP in HIPAP No 4;*
- *Evaluate the potential for propagation events;*
- *Review the adequacy of the proposed safeguards to prevent and mitigate the potential hazardous events; and*
- *Where necessary, submit recommendations to Shoalhaven Starches to ensure that the proposed modified pipeline is operated and maintained at acceptable levels of safety and effective safety management systems are used.*

The PHA assesses the credible, potential hazardous events and corresponding risks associated with the Shoalhaven Starches proposed modified gas supply pipeline from Meroo Meadow.

According to Pinnacle Risk Management there are no Dangerous Goods road or rail transport requirements to or from the site as part of this project. Therefore, transport is not assessed.

In accordance with the approach recommended by the DoP in HIPAP 6 the methodology adopted by Pinnacle Risk is risk-based, that is, the risk of a particular potentially hazardous event is assessed as the outcome of its consequences and likelihood.

The PHA was conducted as follows:

- Initially, the proposed modifications and their locations were reviewed to identify credible, potential hazardous events, their causes and consequences. Proposed safeguards were also included in this review;
- As the potential hazardous events are located at a significant distance from other sensitive land users, the consequences of each potential hazardous event were estimated to determine if there are any possible unacceptable off-site impacts;

- Included in the analysis is the risk of propagation between the proposed pipeline and the adjacent land users; and
- If adverse off-site impacts could occur, assess the risk levels to check if they are within the criteria in HIPAP 4.

According to Pinnacle Risk, the only hazardous material associated with the modifications is natural gas:

- Natural gas is flammable, ie. if released and ignited, there is a risk of jet fires, flash fires and explosions (if confined).
- Natural gas is a Class 2.1 Dangerous Good (DG), ie. a flammable gas.
- Natural gas is a colourless hydrocarbon fluid mainly composed of the following hydrocarbons:
 - Methane (typically 88.5% or higher);
 - Ethane (typically 8%);
 - Propane (typically 0.2%);
 - Carbon dioxide (typically 2%); and
 - Nitrogen (typically 1.3%).

According to Pinnacle Risk a typical natural gas, has a TLV (threshold limit value) of approximately 1,000 ppm and the STEL (short term exposure limit) is 30,000 ppm (ie. approaching 5 vol% which is the lower explosive limit).

The hydrocarbons are not considered to represent a significant environmental threat. Their hazard potential derives solely from the fact that they are flammable materials.

To enable ready leak detection, natural gas is normally odourised with mercaptans (sulphur containing hydrocarbons).

The flammability range is typically 5% to 15% v/v in air. The vapours are lighter than air and will normally disperse safely if not confined and/or ignited.

Products of combustion include carbon monoxide and carbon dioxide.

The PHA prepared by Pinnacle Risk concludes:

The risks associated with the proposed modified natural gas pipeline have been assessed and compared against the DoP risk criteria.

The results presented in this report show compliance with all risk criteria.

Societal risk, area cumulative and propagation risk, and environmental risk are also concluded to be acceptable.

The primary reason for the low risk levels from the natural gas pipeline is the low likelihood of significant pipe failures leading to off-site impact from jet or

flash fires, or explosions. This is due, in part, to the design, operation and maintenance requirements of the Australian Standards (e.g. AS2885).

Based on the analysis in this PHA, there are no further recommendations to be made.

7.2.3 Flooding

WMAwater were engaged to undertake a Flood Hazard Analysis for the proposed modifications associated with this Modification Application (**Annexure 3**). This section of the Modification Report provides a summary of the findings of the WMAwater's flood assessment for this Modification Application.

Detailed hydraulic assessment and modelling was not undertaken by WMAwater as part of the original environmental assessment for this project. Hydraulic modelling is only required if the proposed works will potentially influence the volume of temporary floodplain storage or the conveyance of floodwaters across the floodplain.

The increase in diameter of the pipe will according to WMAwater have no impact on flooding as the pipe is underground and it is only during the construction phase that consideration is required for the potential impacts on the environment and during flood events.

According to WMAwater, construction of the GPRS should have negligible impact on flooding as the plant is constructed on piers, thus resulting in minimal loss of temporary floodplain storage or conveyance. However, according to WMAwater, this assessment should be reviewed once final design plans of the GPRS become available.

The proposed GPRS and pipeline are critical facilities in that failure of the works during a flood and subsequent reconstruction may have a significant financial impact on the ability of Shoalhaven Starches to recover. The works are also identified as a hazardous establishment in the 2005 NSW Floodplain Development Manual. There is also the potential that anthropomorphic sea level rise may increase design flood levels and thus the risk from flooding.

Under the above circumstances, WMAwater indicate the management of the potential public health and environmental risks associated with the escape of materials due to inundation or damage by floodwaters must be considered and formal flood management and procedures adopted in this regard.

Consideration should, according to WMAwater, be given to ensuring that the GPRS can withstanding inundation of floodwaters and structural damage due to flood debris in events up to the Probable Maximum Flood. These issues would need to be resolved at the detail design stage

7.2.4 Geotechnical and Riverbank Stability

GHD were engaged to advise on the effects of a trench excavation in relation to the construction of gas pipeline on the stability of the western bank of Abernethy's Creek. GHD's assessment in relation to this issue is contained in their report "*Geotechnical – Creek Bank Stability, Contamination and Acid Sulfate Soil Assessment*" (the "GHD Report") and which is included as **Annexure 5** to this report. This section of the Modification Report is based upon the findings of the GHD Report.

The GHD Report:

- Provides geotechnical advice on the anticipated ground conditions with respect to the proposed development works; and
- Provides geotechnical advice in relation to the proximity of the proposed pipeline to Abernethy's Creek and potential effects of the proposed modifications to the pipeline on the stability of the creek bank.

In summary the GHD Report demonstrates that the factor of safety in respect to the stability of the creek bank, following excavation of 1 m deep trench for the gas pipeline construction, in conjunction with the rail and Packing Plant development is acceptable for the long-term condition, and therefore will not influence the stability of the western bank of Abernethy's Creek.

The GHD Report identifies the following geotechnical aspects relating to the gas pipeline alignment that should be considered in the design, construction and ongoing operation of the Packing Plant and associated infrastructure include:

- *The extent of settlement over the rail siding and adjacent land, and the gas pipeline alignment, including long term settlement and differential settlement.*
- *It is assumed any construction related load will be limited to 20 kPa applied within the road perimeter. Any additional construction load that may be placed upslope or downslope of the gas pipeline alignment will have to be analysed (i.e., cranes, stockpiles of excavated materials).*
- *Increased loading over the ground surface, ground disturbances or changes in the site surface profile between the proposed packing plant development area and Abernethy's Creek may adversely influence settlement and local and /or general stability.*

7.2.5 Acid Sulphate Soils

The GHD Report, referred to in Section 7.2.5 above, also includes an assessment in relation to Acid Sulphate Soils. In this regard the GHD Report provides a preliminary ASS assessment of the potential for acid sulphate soils to be present in the area of the proposed

works within the anticipated depth of disturbance with recommendations on the need for management.

ASS is naturally occurring soil and sediment containing iron sulphides which when exposed to oxygen can generate sulfuric acid.

The Burrier/Berry 1:25,000 Acid Sulphate Soil Risk Map (1997) Edition 2, prepared by the Department of Land and Water Conservation (DLWC) (DLWC, 1997), indicates that the site is mapped within an area having a low probability of ASS occurrence. According to GHD, the majority of site is situated within alluvial plain areas whilst the western edge of the pressure reduction station is situated within a levee landform (**Figure 10**). The depth of ASS occurrence is variable across the site:

- North-eastern portion (Ap1): depths at or near the ground surface;
- North-western and southern (Ap2): depths between 1 and 3 m below the ground surface;
- South-western (Al4): depths greater than 3 m below the ground surface.

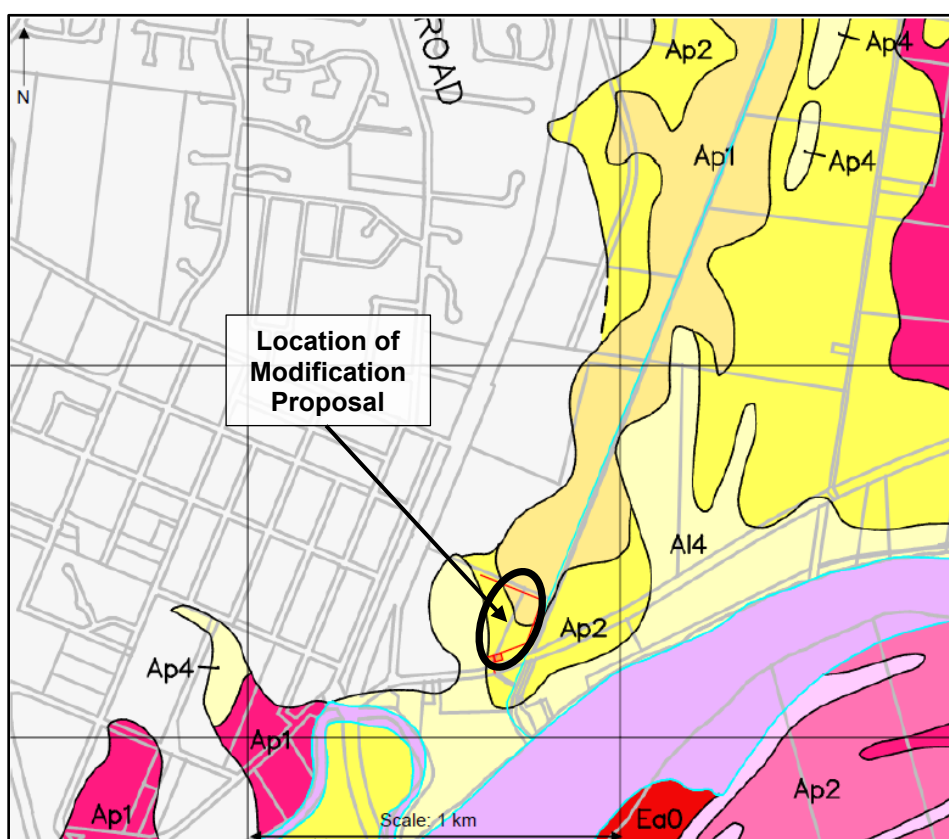


Figure 10: ASS occurrence approximately shown relative to the site (red outline).
(DLWC, 1997) (the GHD Report)

According to GHD, based on previous investigation results, ASS are likely to be encountered within the proposed packing plant site, particularly the lower lying areas, in the north and east. Soft to very soft soils were encountered approximately 15 m west of Abernethy's Creek, to depths between 4.0 m and 9.8 m bgl. The clays were estuarine and described as dark grey high plasticity with silts, sands and shell fragments. The eastern and north-eastern portion of the proposed gas pipeline passes through these soft soil areas and likely to intercept ASS, and groundwater.

GHD recommend that an Acid Sulphate Soil Management Plan (ASSMP) should be prepared to appropriately manage the disturbance of ASS and mitigating potential acid generation and impacts to groundwater and adjacent waterbodies.

7.2.6 Site Contamination

The GHD Report, referred to in Sections 7.2.4 and 7.2.5 above, also includes an assessment the likelihood for contamination to exist on the site from past or present activities and provide recommendations for further investigation and/or options management (if applicable) with respect to the proposed development based on the findings of the assessment.

According to the GHD Report site history information indicated that prior to 1950, the site and surrounding areas were possibly used for rural land use. In 2008, horses were agisted within the grass paddocks. Apart from a possible farmhouse, structures immediately west of Abernethy's Creek, installation of the sewer main in the 1960s and sewer pump station, the site and surrounding areas remained generally undeveloped until 2012.

From 2012, fill was progressively imported to the site and surrounding areas, initially for the construction of a gravel hardstand carpark, then for the proposed packing plant between 2018 and 2021. According to the GHD Report the fill imported to the site comprised road base gravel, latite drainage gravel and clay with shale and gravel. The road base and drainage gravel were sourced from local quarries, whilst the clay was sourced from the Nowra Gaol development site. GHD indicate the imported fill was assessed and classified as VENM.

According to GHD previous investigations did not identify soil contamination at the site that exceeded commercial / industrial assessment criteria (NEPC, 2013). For groundwater, lead and zinc concentrations exceeded the adopted assessment criteria (ANZECC/ARMCANZ, 2000). The source of zinc and lead was not identified but could have been associated with background concentrations. Faecal coliform concentrations were below the reporting limit suggesting leaks from the sewer main were not occurring in

the vicinity of the groundwater monitoring well. It was concluded that the heavy metal impacts were not significant and did not warrant further investigation (ES, 2016). In 2016, a site audit for the proposed packing plant development site was required to satisfy condition 20 of the consent issued by the NSW Minister for Planning and was therefore a statutory audit under the CLM Act 1997.

This previous assessment concluded that based on the results of previous investigation and subsequent remediation and validation of TRH and asbestos impacts that were identified west of the current investigation area (ie. CTP28 – off-site), that the packing plant development site, which includes the current investigation site, was suitable for commercial / industrial land use.

Based on previous and current investigation results, the potential for contamination was identified in three areas of environmental concern (AECs), which included:

- AEC 1: Potential weathering of hazardous building materials and demolition of site structures, and possible storage and use of chemicals (eg. fuels, oils, pesticides).
- AEC 2: Fill of unknown quality and origin.
- AEC 3: Leaks from sewer line and nearby sewage treatment plant. Potential asbestos used in sewer main pipe and historical damage.

Based on review of the potential source-pathway-receptor (SPR) linkages, GHD indicate the proposed works may provide direct contact / inhalation (ie. vapours, dust) exposure opportunities for human and ecological receptors to contamination, if present within these AECs. Based upon previous and current investigation results, GHD indicate the likelihood for contamination to exist at the site is assessed as low. Therefore, due to the likely absence of contamination at the site, GHD consider the SPR linkages are incomplete. GHD conclude that no further investigation is warranted.

Although the likelihood for contamination was assessed by GHD as low, GHD recommend that:

“...a Construction Environmental Management Plan (CEMP) be prepared to manage the occurrence of potential contamination, buried waste, demolition waste, ACM, etc. in all parts of the site during construction. The CEMP should also include an Unexpected Finds Protocol (UFP).”

7.2.7 Visual Impact

The Shoalhaven Starches factory site is situated on Bolong Road, the gateway to Bomaderry, within an area currently containing a mixture of rural and industrial land uses. These different land uses contrast with each other and result in a mixed visual character.

The rural areas, much of which comprises the Shoalhaven Starches Environmental Farm, are generally flat to gently undulating and planted with pasture grasses. These areas have a typical rural/agricultural character, common throughout the region. To the north and forming a background to the rural landscape are the timbered slopes of the Cambewarra escarpment.

The Shoalhaven Starches factory complex is characterised by typical industrial structures with an overall bulk and scale that dominates the surrounding locality. The site, despite being partially screened by vegetation along Bolong Road, the Shoalhaven River and Abernethy's Creek visually dominates the immediate locality. The development is particularly exposed to view along Bolong Road. This view reveals some of the internal structures within the site including recovery and storage tanks, car park, fermentation tanks and the Ethanol Plant. Overall the appearance of the site is typical of an industrial facility of this scale and nature.

The most relevant vantage points from where the works associated with this Modification Proposal may be visible (see **Figure 11**) would include:

- Bolong Road – Bolong Road runs along the frontage of the site. Views of the factory are possible when travelling in either an easterly or westerly direction. Some attempts have been made to provide some tree planting along the boundaries to “soften” the appearance of the development. The existing building forms and structures are however clearly visible to motorists travelling along this stretch of Bolong Road.
- Bomaderry urban area – The existing plant is visible from a number of locations within the eastern outskirts of Bomaderry. Bomaderry is slightly elevated and some locations within the urban area do have extensive views of the site.

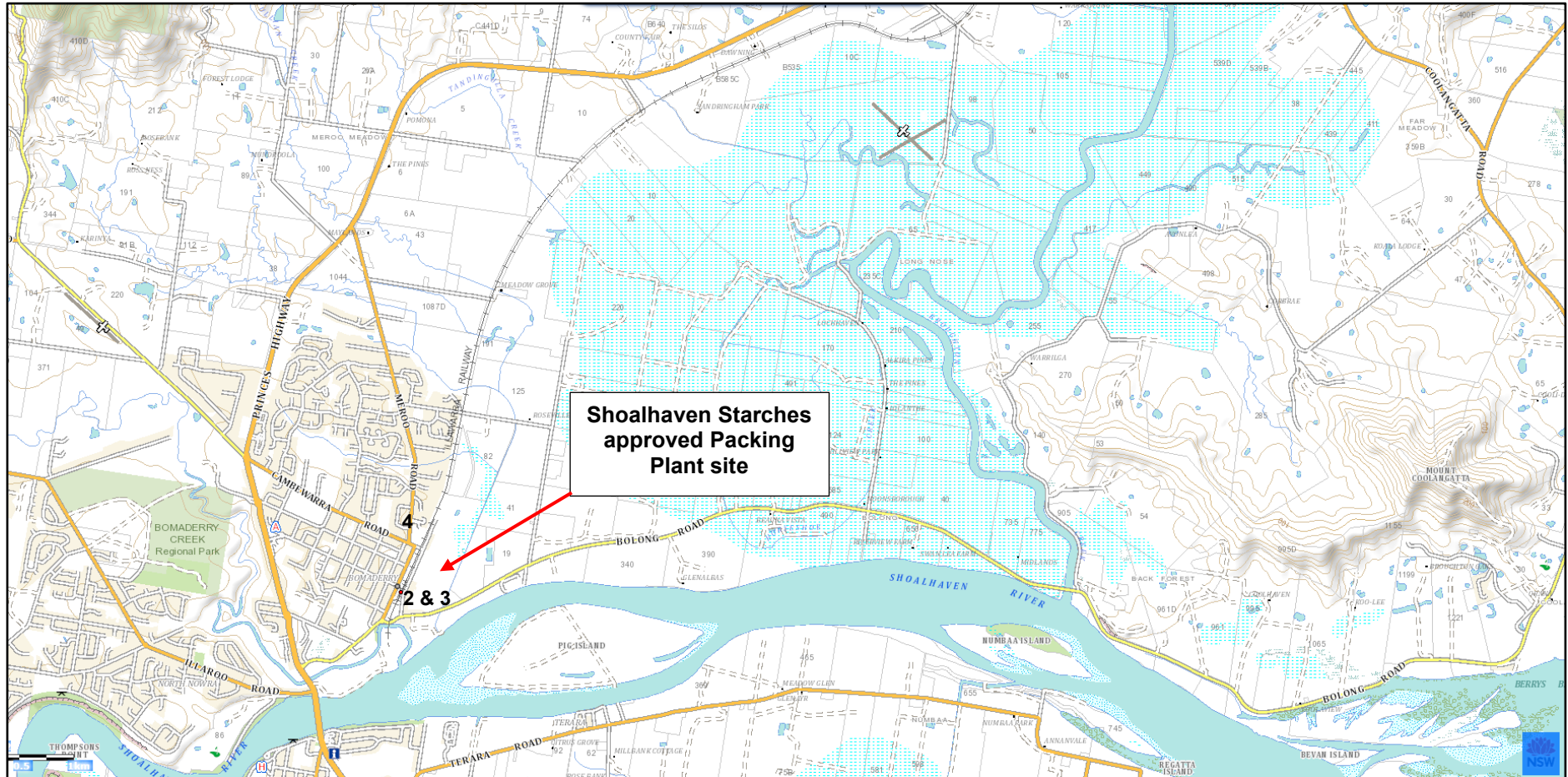


Figure 11: Vantage Points for Plates 2, 3 and 4.

Visual Impact of Proposal

That part of this Modification Proposal that includes the realignment of the gas pipeline will have no visual impact as the pipeline is to be laid in a trench underground.

The proposed relocated GPRS will be sited closer to Bolong Road when compared to the original approved location. The proposed GPRS will be setback between 6.0 and 6.5 metres from the Bolong Road frontage of the site.

The proposed GPRS will be similar in appearance to the existing GPRS located further to the east along Bolong Road and will consist largely of a series of elevated pipework on a metal frame, with a maximum height of four (4) flues above ground level of 11 metres.

Bolong Road

The realignment of the gas pipeline will have no visual impact as it will be laid in a trench underground.

The proposed relocated GPRS will be sited closer to Bolong Road when compared to the original approved location.

The proposed GPRS will be setback between 6.0 and 6.5 metres from the Bolong Road frontage of the site. This structure will sit upon a platform a minimum of 2 metres above existing ground level; and will include four (4) flues with a maximum height above ground level of 11 metres.

Plate 2 below is a view of the location of the GPRS from a vantage point along Bolong Road.



Plate 2: View of location of proposed relocated Gas Pressure Reduction facility from Bolong Road.

The GPRS will be clearly visible from along this section of Bolong Road.

The proposed works will be located between the existing rail spur that extends into the Shoalhaven Starches site to the west; as well the Shoalhaven City Council (Shoalhaven Water) sewer pumping station immediately to the east.

The approved Packing Plant will be situated to the north.

There are industrial unit developments situated along the northern side of Bolong Road further to the west. A similar Gas Pressure Reduction facility is located further to the east along Bolong Road to the east of Abernethys Creek station.

Opposite the site for the GPRS, is the Shoalhaven Starches main factory site, and in particular the Starch Dryer No. 5 buildings and the approved Specialty Products and Product Dryer Buildings (currently under construction) (**Plate 3**).



Plate 3: View of Packing Plant, Starch Dryer No. 5 building, and specialty Product Building under construction opposite location of GPRS.

Clearly the position of the relocated GPRS is undergoing significant change in terms of the level and scale of development; and will be characterised by significant large scale industrial development.

The proposed GPRS will not be a visually significant structure when viewed in context with other surrounding industrial developments, particularly those that are presently under construction within its vicinity. In this regard the GPRS does not comprise a visually large scale development when viewed in context with surrounding projects

Furthermore the extent to which the facility will be visible within the broader landscape will be limited to only a short section of Bolong Road.

Given the relatively close proximity of the facility to Bolong Road it is however recommended that landscape screening be undertaken along the frontage of the facility to Bolong Road to soften the appearance of the GPRS when viewed from along Bolong Road. The plans that support this Modification proposal make provision landscape screening between the Bolong Road frontage and this work.

Bomaderry Urban Area

The township of Bomaderry is slightly elevated and some locations within this urban area have extensive views of the site (refer **Plate 4**).

In light of the prevailing scale of existing development located along Railway Street the proposed modification works will be largely screened from view from vantage points from the existing Bomaderry township and along Railway Street.



Plate 4: View of Shoalhaven Starches factory site from corner of Railway Street and Cambewarra Road, Bomaderry.

7.3 THE SUITABILITY OF THE SITE FOR DEVELOPMENT

In our view the site is suitable for the development, and including the development as modified by this application:

- The subject land is suitably zoned and the proposal satisfies state and local planning provisions applying to the land.
- The modified proposal will not have any significant additional impacts on the environmental values of this locality over and above those envisaged by the original approved development.
- The modified development will not result in any significant adverse effects on local amenity.
- The modification proposal does not seek to alter the approved physical extent of operations. Under these circumstances the proposal will not result in any increased inputs to the production process; increased production; or increases in traffic or other impacts on the locality.

Given these circumstances it is our view that the subject site is suitable for the proposed development.

7.4 SUBMISSIONS

It is envisaged that the development application once submitted to the Department will be placed on public exhibition; and the general public will be afforded an opportunity to review the documentation supporting the application.

Any public submissions made following the exhibition will need to be taken into consideration by Council when it determines the application.

7.5 THE PUBLIC INTEREST

It is our view that the modification proposal is in the public interest:

- The proposal is consistent with the objectives of state and local planning provisions applying to the site.
- The modified proposal will not result in any significant adverse environmental impacts.
- The modified proposal will not result in any significant amenity impacts in the locality.
- The modified proposal will be substantially the same development as that approved under the Project Approval.

8.0 CONCLUSION

The Shoalhaven Starches factory located on Bolong Road, Bomaderry produces a range of products for the food, beverage, confectionary, paper and motor transport industries including starch, gluten, glucose and ethanol.

On the 30th October 2012 the Independent Planning Commission approved Concept Plan (MP10_0144) and Project Application (MP_10_0108) for the Shoalhaven Starches Gas Pipeline Project. This project provided for the installation of a 5.5 km gas pipeline connecting the Shoalhaven Starches factory site located at Bolong Road, Bomaderry directly to the Eastern Gas Pipeline (EGP) at Pestells Lane, Meroo Meadow. The pipeline would tie directly into the EGP and provide gas directly to the Shoalhaven Starches factory.

As part of the project, a metering facility would be installed at the tie-in location at Meroo Meadow. In addition, a pressure reduction facility would be installed at the end of the pipeline to ensure a continuous pressure of 3,500 kPa was maintained to service both the factory as well as the proposed Gas Co-generation Plant that has been approved for the Shoalhaven Starches factory site as part of the Minister's approval for the Shoalhaven Starches Expansion Project (MP06_0228).

Shoalhaven Starches have been reviewing the design requirements for this project and seek to undertake the following modifications to the project / concept approval:

- To relocate the approved location of the Gas Pressure Reduction Station (GPRS) that is to be located on the approved Packing Plant site to the north of Bolong Road; and
- To alter the diameter of the pipeline which will result in an increase in the diameter of the pipeline from DN 150 to DN 300.

Concept Plan Approval 10_0144 and Project Approval 10_0108 were transitioned on the 30th April 2021 (Government Gazette 174 – Environment) to the State Significant Infrastructure under clause 5 of Schedule 2 to the *Environmental; Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017*.

As State Significant Infrastructure, modifications are required to obtain approval from the NSW Minister for Planning pursuant to Section 5.25 of the Environmental Planning & Assessment Act.

The preparation of this Modification Report has been undertaken following consultation with the DPIE, the EPA, The Natural Resource Access Regulator (NRAR), Fire & Rescue NSW, and Shoalhaven City Council.

The Modification Report is supported by the following expert assessments:

- A Preliminary Flood Hazard Analysis prepared by WMAwater (**Annexure 3**) concludes that:

- The increase in diameter of the pipe will have no impact on flooding as the pipe is underground and it is only during the construction phase that consideration is required for the potential impacts on the environment and during flood events.
- Construction of the GPRS should have negligible impact on flooding as the plant is constructed on piers as shown in Image 2, thus resulting in minimal loss of temporary floodplain storage or conveyance. However, this assessment should be reviewed once final design plans of the GPRS become available.
- A PHA undertaken by Pinnacle Risk Management (**Annexure 4**) that assess the risks associated with the proposed modifications and provides a comparison against relevant risk criteria. The PHA demonstrates the Modification Proposal will comply with all risk criteria. The PHA also concludes that societal risk, area cumulative risk and environmental risk will be acceptable risk, area cumulative risk and environmental risk will be acceptable.
- A Geotechnical – Creek Bank Stability, Contamination and Acid Sulphate Soils Assessment prepared by GHD (**Annexure 5**) that addresses, site contamination, acid sulphate soils and riverbank stability issues. This assessment concludes:
 - In terms of the impacts on the stability of the banks of Abernethy's Creek, the factor of safety in respect to the stability of the creek bank following excavation of 1 m deep trench for the gas pipeline construction, in conjunction with the rail and Packing Plant development is acceptable for the long-term condition, and therefore will not influence the stability of the western bank of Abernethy's Creek.
 - With respect to site contamination, GHD assess the likelihood for contamination to exist at the site as low. GHD conclude no further investigation is warranted. Although the likelihood for contamination was assessed as low, GHD recommend that a Construction Environmental Management Plan (CEMP) be prepared to manage the occurrence of potential contamination, buried waste, demolition waste, ACM, etc. in all parts of the site during construction. The CEMP should also include an Unexpected Finds Protocol (UFP).
 - In relation to the potential presence of Acid Sulphate Soils (ASS), GHD indicate that ASS are likely to be encountered within the proposed packing plant site, particularly the lower lying areas, in the north and east. Soft to very soft soils were encountered approximately 15 m west of Abernethy's Creek, to depths between 4.0 m and 9.8 m bgl. The eastern and north-eastern portion of the proposed gas pipeline passes through these soft soil areas and likely to intercept ASS, and groundwater. GHD recommend that an ASS Management Plan (ASSMP) should be prepared to

appropriately manage the disturbance of ASS and mitigating potential acid generation and impacts to groundwater and adjacent waterbodies.

The Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification proposal will not result in any increases in overall production rates from the site, nor will it involve any significant changes in level of impacts arising from the approved development.

The Modification Report concludes that the proposed modifications will not have significant adverse environmental impacts and the development to which Concept Plan (MP 10_0144) and Project Approval (MP 10_0108) as modified by the Modification Application relates, will be substantially the same development as the development for which this consent was originally granted and before that consent as originally granted was modified.

The Modification Application will not involve changes to the size, scale or intensity of the existing Shoalhaven Starches operations. The modification proposal will not result in any increases in production rates from the site, nor will it involve any changes in level of impacts arising from the approved development.

The Modification Report includes an assessment of the proposal having regard to the relevant matters for consideration as listed under Section 4.15 of the Environmental Planning and Assessment Act, 1979. The assessment concludes that the modification proposal, within its local context, is satisfactory and should be approved.

Approval for this Modification Application is sought.



Stephen Richardson RPIA
COWMAN STODDART PTY LTD

ANNEXURE 1

Responses from Government Agencies

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 2

Plans of Modification Proposal

**Shoalhaven Starches
Bolong Road, Bomaderry**

ANNEXURE 3

Preliminary Flood Hazard Analysis

prepared by
WMAwater

Shoalhaven Starches
Bolong Road, Bomaderry

ANNEXURE 4

Preliminary Hazard Analysis

prepared by
Pinnacle Risk Management

Shoalhaven Starches
Bolong Road, Bomaderry

ANNEXURE 5

Geotechnical – Creek Bank Stability, Contamination and Acid Sulfate Soil Assessment

**prepared by
GHD**

**Shoalhaven Starches
Bolong Road, Bomaderry**