

## **Assessment Report**

**Proposal by Australian Bay Lobster Producers Pty Ltd  
for the construction and operation of a commercial  
bay lobster aquaculture facility and associated  
seawater supply works, Cudgen, Tweed Local  
Government Area  
Development Application No. DA-282-11-2004-i**

**Department of Planning**

**December 2005**

## EXECUTIVE SUMMARY

On 15 November 2004, Australian Bay Lobster Producers Pty Ltd (the Applicant) lodged a Development Application (DA) with the Department of Infrastructure, Planning and Natural Resources, (now Department of Planning, the Department) for the construction and operation of a commercial bay lobster aquaculture facility and associated seawater supply works at Cudgen, in the Tweed local government area.

The proposed development involves construction and operation of the following:

- three distinct farms each including a hatchery and growout facilities for producing bay lobster, carparking and seawater and freshwater storage tanks;
- processing building, workshop facilities, administration building and site access upgrade at the main development site;
- underground pumping station at Dreamtime Beach and sub-sand seawater intake pipeline from the pumping station to the main site; and
- wastewater pipeline from the main development site to the Kingscliff Wastewater Treatment Plant

The proposed development involves a capital investment of approximately \$18 million and would employ up to 200 people on a full-time basis at full production. Twenty five construction jobs would also be created.

The DA was lodged with the Minister on the basis that it was State significant development, falling into a category of development under a Ministerial declaration. On 10 June 2005, this declaration was revoked and on 1 August 2005, the *Environmental Planning and Assessment Act 1979* (the Act) was amended by amending legislation to delete the State significant development provisions. Notwithstanding the amendments, clause 8J(7) of the savings and transitional provision in the *Environmental Planning and Assessment Regulation 2000* (the Regulation) provides that the DA may be determined "as if the amendments made to the Act by Schedule 1 to the *Environmental Planning and Assessment Amendment (Infrastructure and Other Planning Reform) Act 2005* had not been made". Accordingly, if the Minister forms the view that the DA was for State significant development when it was lodged, it may be determined pursuant to the State significant development provisions of the Act as they existed prior to 1 August 2005.

In accordance with the Regulation, the DA and supporting Statement of Environmental Effects (SEE) were publicly exhibited for an extended period from Thursday 25 November 2004 until 21 January 2005. The Department received a total of 65 submissions in response to the public exhibition of the DA, including 60 submissions from members of the public of which 41 objected to the proposal, 7 supported the proposal and 12 raised issues of concern. The balance of submissions were received by Government authorities including the Department of State and Regional Development and Department of Primary Industries, which stated their support for the development, the Roads and Traffic Authority which initially objected to the proposal (but subsequently issued general terms of approval) and the Department of Environment and Conservation and Tweed Shire Council, which did not state a position. The Department also received two petitions during the public exhibition period, one objecting to the proposal, the other raising issues of concern.

The key issues raised in submissions related to flooding impacts, water quality impacts, groundwater impacts and acid sulfate soils. A number of submissions also raised concern with regard to odour and noise impacts.

Access to the site was recognised as one of the key constraints to the viability of the proposal. Considerable negotiation between the RTA, Tweed Shire Council, the Department, Applicant and other Government authorities was undertaken in order to facilitate a solution that was acceptable to all parties and in particular, did not jeopardise the safety of road users. The key

outcome of these negotiations permitted the Applicant to gain access to the Pacific Highway via a connecting road that linked to the Highway interchange, subject to stringent management and/or upgrades of the affected intersections.

The potential groundwater and acid sulfate soil impacts were also identified as key issues associated with the proposal. The Department was not satisfied that the proposed development could be constructed without jeopardising the groundwater resources. Through negotiation with the Department, the Applicant revised the scope of the development, particularly the size of the site's borrow pit so that it would no longer intercept groundwater or acid sulfate soils.

The Department has assessed the development application, Statement of Environmental Effects and issues raised in submissions. Through this assessment, the Department is satisfied that the proposed development could be adequately managed and recommends that the Minister approve the proposed development, subject to conditions. It is considered that the conditions of the recommended instrument of consent impose appropriate measures to manage the future environmental performance of the proposed development, and set in place on-going environmental management, monitoring and reporting mechanisms.

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## **1 INTRODUCTION**

On 15 November 2004, the Department received a Development Application (DA) from Australian Bay Lobster Producers Pty Ltd (the Applicant) for the construction and operation of a commercial bay lobster aquaculture facility and associated seawater supply works at Cudgen, in the Tweed local government area (see Figure 1).

This report represents the Department's assessment of the proposed development, in accordance with the *Environmental Planning and Assessment Act 1979* (the Act). The Department has assessed the DA and the issues raised in submissions received during the exhibition period, and determined that the development could be constructed and operated within appropriate environmental limits. If the Minister agrees, the Department recommends approval of the proposed development and the imposition of a number of conditions as set out in the draft instrument of consent.

It is considered that the conditions of the recommended instrument of consent impose appropriate measures to ensure the environmental impacts associated with the proposed expansion are managed, mitigated and monitored.

## **2 SITE CONTEXT**

### **2.1 Site Location**

The proposed aquaculture facility would occupy an area of approximately 45 hectares within a property approximately 150 hectare in size. The property is described as 355 Cudgen Road, Cudgen, located on the State's far North Coast. An area of approximately 27 hectares on the site would also be required to source fill for the development. The proposal also involves the pumping of fresh seawater from Dreamtime Beach via a pipeline to the main aquaculture site. The pipeline route would traverse a number of road reserves and private property, identified in Figure 1. A wastewater pipeline would also be constructed from the site along the majority of this route ending at the Kingscliff Wastewater Treatment Plant.

### **2.2 Site Description**

The proposed aquaculture development and associated water supply infrastructure would be located on land zoned 1(a) Rural, 1(b2) Agricultural Protection, 5(a) Special Uses (Drainage) and (Sewage Treatment/ Turf Farm) and 6(a) Open Space as well as part unzoned land under the *Tweed Local Environmental Plan 2000*.

The proposed development site has been cleared of vegetation, drained and used for sugar cane farming. It is currently dominated by sugarcane, annual weeds and grasses. A small stand of *Casuarina glauca* (swamp she oak) fringes the Pacific Highway. The proposed site of the aquaculture facility is currently in the process of being converted to cattle grazing.

The pipeline route would take the path of existing cleared and disturbed areas. The pumping station would be located within an existing gravel carpark at the marine reserve adjacent to Dreamtime Beach.

**Figure 1.** Location of proposed Bay Lobster aquaculture facility.



- Seawater intake pipeline
- Wastewater pipeline

### 2.3 Surrounding Land Uses

The main aquaculture site is located adjacent to the Pacific Highway near the Tweed Valley Way interchange. Melaleuca Station, a tourist facility, is located 500 metres to the west of the property and Pacific Highway (refer Figure 2). Sand mining operations are carried out approximately one kilometre to the east of the property. Sugarcane fields dominate the area.

The main development site is relatively removed from any sizeable population centres. The Melaleuca Station owner’s residence is the closest dwelling to the proposed aquaculture facility (approximately 500m). Three other residences are located within 1.8 kilometres of the site. Figure 2 identifies the neighbouring homesteads to the main aquaculture facility.

The pipeline route traverses a number of roads located within residential areas with the pumping station at Dreamtime Beach located approximately 200 metres from residences.

**Figure 2.** Location of neighbouring properties.



### 3 THE DEVELOPMENT PROPOSAL

#### 3.1 Description of Proposal

The Applicant is seeking development consent for the construction and operation of an aquaculture facility for the commercial production of Bay Lobster (*Thenus orientalis* and *T. indicus*) and associated seawater supply works. A pipeline from the site to the Kingscliff Sewage Treatment Plant to convey effluent also forms part of this application. Figure 1 and Figure 3 show the layout of the proposed aquaculture facility and location of the pipeline route.

The proposed development involves the construction and operation of three distinct farms (built over three stages) each including a hatchery and growout facilities for producing bay lobster, carparking and seawater and freshwater storage tanks. The main development site would also comprise a processing building, workshop facilities, and administration building that would be constructed during Stage 1.

The yearly production of Bay Lobster in Stage 1 is anticipated to be 1076 tonnes with a standing stock of approximately 400 tonnes. This is expected to rise to 3228 tonnes of Bay Lobster per year at full production. The proposed facility has been designed to produce two products, a live, hard shell animal of a nominal 218g and a soft shell animal (frozen or fresh chilled) of a nominal 45g. Figure 4 shows a photo of *Thenus orientalis* (bay lobster).

**Figure 3.** Site layout

Bay lobster feed on a variety of bivalves during the larval rearing stage and squid during the nursery and growout stages. The Applicant anticipates approximately seven tonnes per day of feed for Stage 1 would be required, which includes approximately 555kg (111kg meat) of bivalves and approximately 6.5 tonnes of squid.

The Applicant aims to eventually replace the bivalves and squid with compounded diets made in house. The Department and Department of Primary Industries support the use of compound feed to minimise the dependence on obtaining live fish and minimise waste. Should the Minister determine to approve the proposed development, the Department recommends a condition be imposed that requires the Applicant to continue its investigations into alternative forms of feed for the bay lobsters with a view to implementing the alternative method as soon as possible.

**Figure 4.** *Thenus orientalis* (Bay Lobster)



### **Main Aquaculture Facility**

The proposed production buildings, including the broodstock, larval rearing, nursery, growout and laboratory facilities would be approximately 5.80 metres in height and enclosed by a lightweight structure, similar in design to a greenhouse structure. Each 'greenhouse' building would have an internal layer of black plastic to maintain low light levels with white plastic on the outside to reflect excess heat. An outer layer of green shade cloth would cover each of the production buildings in order to prevent glare and protect the plastic fabric from natural elements, such as hail damage. The dimensions of each building are shown in Figure 3.

### **Pipeline and Pumping Station**

The proposed development includes the laying of pipelines to obtain fresh seawater and dispose of effluent. The proposed pipeline for seawater is to be constructed from the main aquaculture site via a series of road reserves and private property to Dreamtime Beach, Kingscliff, totalling approximately 5.5km in length. The pipeline to dispose of effluent would follow a similar route, ending at the Kingscliff Wastewater Treatment Plant.

Upon reaching the beach reserve, the pipes would be connected to a pumping station within an underground caisson located at the carpark at Dreamtime Beach (refer Figure 5). From the pumping station, the pipelines would be directionally drilled through coffee rock (indurated sand) with the intake lying on the rock covered by approximately 4 metres of sand. Further details on the works at Dreamtime beach are provided in section 6.3 of this report.

**Figure 5.** Proposed location of the pumping station and intake pipelines at Dreamtime Beach, Kingscliff

## **4 STATUTORY PLANNING FRAMEWORK**

### **4.1 Permissibility**

The proposed development is located on land to which *State Environmental Planning Policy No. 62 – Sustainable Aquaculture* (SEPP 62) applies. Clause 7 of SEPP 62 states that a person may carry out aquaculture development with development consent if it complies with the site location and operational requirements set out in Schedule 1 of the SEPP for the development. Specifically, Schedule 1 of the SEPP sets out minimum performance criteria that a development must meet in order to make it permissible with consent.

A comparison of the proposal against the minimum performance criteria is included in Appendix A and reveals it complies with all criteria except 2(2) – zoning under environmental planning instrument. In this regard, 2(2) states that tank based aquaculture is permissible with development consent in rural and industrial zones. The subject site is variously zoned under the *Tweed Local Environmental Plan 2000* (Tweed LEP) as part rural, part open space and part special uses. Accordingly, part of the development would ordinarily be prohibited. However, because the proposed development is State significant development and the DA is required to be determined under the State significant development provisions of the Act as they were in force prior to 1 August 2005, section 76A(8)(c) applies and the proposed development is permissible with consent.

### **4.2 Legislative Context**

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

The DA and SEE were publicly exhibited between Thursday 25 November 2004 and Friday 7 January 2005, however, following several requests from members of the public and a representation from Tweed Shire Council on behalf of many residents of Tweed, the public exhibition period was extended by two weeks to Friday 21 January 2005. The DA and accompanying SEE were exhibited at the following locations:

- Department's Lee Street Office, Information Centre, Sydney;
- Tweed Shire Council's Brett Street Office, Tweed;
- Tweed Shire Council's Civic and Cultural Centre, Murwillumbah; and
- Nature Conservation Council of NSW, Sydney.

Nearby landowners and occupiers were notified in writing about the proposed development. The Department considers that the requirement of the Act to notify landowners adjacent to the development site and potentially adversely affected landowners has been met.

Notification of the proposed development was placed in the *Tweed Daily News* and the *Tweed Sun*. The newspaper notifications provided details of the proposal, exhibition locations and dates, and information on how interested parties could make a submission. A number of site notices providing the same information were also displayed on the proposed development site for the duration of the exhibition period.

### **State Significant Development**

On 3 August 1999, in accordance with section 76A of the *Environmental Planning and Assessment Act 1979* (the Act), the then Minister for Planning declared all aquaculture industry that will employ more than 20 people on a full-time basis, to be a class of development that is State significant development. The Applicant has advised that the proposed aquaculture facility would employ up to 200 people on a full-time basis at full-scale operation, and therefore, if the Minister is satisfied of these matters, and forms the opinion

that it was State significant development at the time of lodgement, it is State significant development as a result of the operation of clause 8J(7) of the Regulation.

### **Integrated Development**

The proposal is classified as integrated development under section 91 of the Act because, in addition to development consent, the proposed development requires an aquaculture permit from the Department of Primary Industries under the *Fisheries Management Act 1994*, an Environment Protection Licence from the Department of Environment and Conservation (DEC) under the *Protection of the Environment Operations Act 1997*, a water licence from the Department of Natural Resources under the *Water Act 1912*, and approvals from Tweed Shire Council, Department of Lands and the Roads and Traffic Authority under the *Roads Act 1993*.

All authorities, excepting Council have issued their General Terms of Approval indicating the terms under which they would be prepared to issue a licence or permit. Council did not, however, notify the consent authority within the period prescribed under the Regulation that it would not provide its general terms of approval. As such, the Minister may legally determine the development application and, if the Minister determines to approve the application, Council cannot refuse to grant its approval, if an application seeking that approval is sought within three years from the date of development consent. Further, that approval cannot be inconsistent with the development consent.

In this circumstance, the Department highlights that the Roads Act approval relates to the laying of the seawater and wastewater pipelines within Council's road reserve to which Council granted landowners consent. The Department forwarded a copy of the draft recommended instrument of consent to Council for its consideration, however, no response was received. Notwithstanding, the Department considers that the draft recommended conditions make adequate provision for the protection of Council's assets. Specifically, the Department recommends that any development consent that may be issued include a condition that roadworks are to be undertaken in accordance with Council's reasonable requirements, should there be any. The Department considers this to be a practical approach that permits the Applicant to progress the proposed development, while maintaining a potential input role for Council, should it choose to accept it.

### **Concurrence**

Under the *Coastal Protection Act 1979* and accompanying Regulations, a person must not, without the concurrence of the Minister for Natural Resources, carry out development on land below the mean high water mark within the coastal zone. As the proposed development involves such works, an application for concurrence was sought. In determining whether to grant concurrence, the Minister must have regard to whether the works in that zone would be inconsistent with the principles of ecologically sustainable development, adversely affect the behaviour, or be adversely affected by the behaviour of the sea etc., or adversely affect any beach or dune or bed, bank, shoreline etc. of the sea. The then Department of Infrastructure, Planning and Natural Resources considered the proposal and was satisfied that the proposed works within the coastal zone would not be inconsistent with the matters described above. Conditional concurrence was subsequently granted under delegation on 21 April 2005. Should the Minister approve the proposed development, it is recommended that the conditions of this approval be incorporated into the recommended instrument of consent.

### **Non-Designated Development**

*State Environmental Planning Policy No 62 – Sustainable Aquaculture* (SEPP 62) applies to the proposed aquaculture development. Under clause 13 of SEPP 62, aquaculture development that is categorised as Class 1 or 2 (low-medium risk) is considered to be non-

designated development. Development which is categorised as Class 3 is designated development.

The relevant class of development is determined having regard to the Project Profile Analysis (PPA). Clause 12 of SEPP 62 provides for a PPA to be prepared for particular aquaculture development in any part of the State. For this development, the relevant PPA is contained within the *North Coast Aquaculture Strategy – Land-based aquaculture* (the Strategy).

Specifically, a PPA is a matrix of environmental and operational criteria for ranking the level of environmental risk (Level 1, 2 or 3) posed by a development in relation to its location and operational attributes. Development that only meets Level 1 (low risk) criteria is considered to be Class 1 aquaculture under SEPP 62 and therefore non-designated development. Development that meets a combination of Level 1 and 2 criteria is considered to be Class 2, non-designated development, while development that meets any Level 3 criteria being considered Class 3, designated development.

The Applicant evaluated the proposed development against the Strategy's PPA and concluded that the proposed development would be a Class 2 aquaculture development as the risks posed by the development in relation to each of the criteria in the PPA were either Level 1 or Level 2. The Applicant's consideration against the PPA was presented at the Planning Focus Meeting held for the development in which representatives of the Department of Primary Industries, Council and the Department were present. All the agencies present at this meeting, including the Department, were satisfied with the Applicant's consideration of the proposal against the PPA and conclusion that it would be a Class 2 aquaculture development. Additionally, this assessment was not challenged by the integrated approval bodies, other agencies or the general public during the exhibition period.

#### **4.3 Relevant Environmental Planning Instruments and Strategies**

The assessment of the proposed development is to be considered against the following environmental planning instruments and strategies:

- *State Environmental Planning Policy No. 62 – Sustainable Aquaculture* (SEPP 62);
- *State Environmental Planning Policy No. 11 – Traffic Generating Development*;
- *North Coast Regional Environmental Plan*;
- *Tweed Local Environmental Plan 2000* (Tweed LEP);
- *Coastal Policy 1997*; and
- *NSW North Coast Sustainable Aquaculture Strategy – Land Based Aquaculture*.

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

##### **State Environmental Planning Policy No. 62 – Sustainable Aquaculture**

*State Environmental Planning Policy No. 62 – Sustainable Aquaculture* (SEPP 62) aims to encourage the development of sustainable aquaculture in the State making it permissible with consent in certain areas of the State where a comprehensive and integrated regional strategy is present, provided the proposed development meets a number of minimum performance requirements.

The Policy also provides for a graduated environmental assessment regime for aquaculture development depending on the level of environmental risk associated with the site and operational factors. Under the SEPP, the Department considers the proposal to be permissible with development consent. The provisions of SEPP 62 as they relate to the proposal are discussed in Section 4.2 and in greater detail in Appendix A.

### **State Environmental Planning Policy No. 11 – Traffic Generating Developments**

In accordance with the requirements of *State Environmental Planning Policy No. 11 – Traffic Generating Developments* (SEPP 11), a copy of the development application was forwarded to the Roads and Traffic Authority (RTA) for its consideration. The RTA initially objected to the proposal on the basis that the site access was unsafe, however, following considerable negotiation, an outcome was reached that enabled the RTA to issue its General Terms of Approval. Issues relating to traffic management are discussed in section 6.4 of this report.

### **North Coast Regional Environmental Plan**

The *North Coast Regional Environmental Plan* (North Coast REP) provides an overall framework for the management of development in the region in order to provide optimal economic and social benefits to the local community and visitors to the region.

The objectives of the REP in relation to agricultural resources are to conserve the productive potential of agricultural land, to provide for new forms of agricultural development and to ensure that commercial agriculture is not adversely affected by incompatible uses. It is considered that the proposed development satisfies the objectives of the REP as they relate to development in the area. A detailed assessment of the proposed development against the provisions of the REP is included in Appendix A of this report.

### **Tweed Local Environmental Plan 2000**

Under the *Tweed Local Environmental Plan 2000* the proposed development is located on land variously zoned 1(a) General Rural, 1(b2) Agricultural Protection, 5(a) Special Uses (Drainage) and (Sewage Treatment/ Turf Farm) and 6(a) Open Space and part unzoned land. The proposed development is defined under the Tweed LEP as an Animal Establishment and is permissible with consent in the 1(a), 1(b2) and 5(a) zones and unzoned land, but prohibited in the 6(a) zone. The permissibility of the development has previously been discussed in section 4.1 of this report.

The site of the main aquaculture buildings, including the hatchery, administration buildings, carparking etc is located on 1(a) and 1(b2) is consistent with the objectives of these zones which aim to: enable the ecologically sustainable development of land that is suitable for primary agricultural or natural resource utilisation purposes and associated development; to protect the rural character and amenity; and protect identified prime agricultural land from fragmentation and the economic pressure of competing land uses.

The pipelines for seawater and wastewater are located on zone 5(a). Whilst not necessarily consistent with the primary objective of the 5(a) zone which is to identify land to be developed primarily by public bodies, for community facilities and services, roads, railways etc., the secondary objective is to provide for flexibility in the development of the land. The Department considers that the proposed pipelines are not dissimilar to a sewer or water main that is permissible in this zone and would therefore not jeopardise the objectives of this zone.

The proposed pumphouse and part of the seawater pipeline is located on land zoned 6(a) Open Space. The primary objective of this zone is to identify public land to satisfy the open space and recreational needs of local residents and visitors and to enable its development to encourage or assist this objective. The secondary objective is to allow other development that is compatible with the recreational use of the land. The pumphouse and pipeline do not provide recreational facilities for the people, however, it is considered that they would not jeopardise the objectives of the zone as they would be located underground.

A detailed consideration of the proposed development against the provisions of the Tweed LEP is provided in Appendix A.

### **Coastal Policy 1997**

Consideration of development applications against The Coastal Policy, where relevant, is a prescribed matter pursuant to section 79C of the Act. The proposed development is in a location to which this Policy applies and hence, its provisions must be taken into consideration as part of the assessment of the development application.

The proposed development has been assessed against the Policy's strategic actions. The Department's assessment concludes that the proposal is consistent with the provisions of the Policy.

### **NSW North Coast Sustainable Aquaculture Strategy – Land Based Aquaculture**

The NSW North Coast Sustainable Aquaculture Strategy has been developed to provide a focus for facilitating economic development and attracting aquaculture development to the region. The Strategy provides a framework for interfacing the technical provisions of the Aquaculture Industry Development Plan (AIDP) under the *Fisheries Management Act 1994* with the land use planning and integrated regulatory provisions under the *Environmental Planning and Assessment Act 1979*.

The proposed development has been assessed against the aims and objectives of the Aquaculture Strategy. A detailed assessment of the proposal against these is discussed throughout this assessment report. The Department is satisfied that the proposal is consistent with these aims and objectives of the Strategy.

## **5 CONSIDERATION OF ISSUES RAISED IN SUBMISSIONS**

The Department received sixty five (65) submissions and two petitions in response to the public exhibition of the DA.

Of these submissions, 60 were received from members of the public in which 41 objected to the proposal, 7 supported the proposal and 12 raised issues of concern. The balance of submissions were received from Government authorities including the Department of State and Regional Development and Department of Primary Industries, which stated their support for the development, the Roads and Traffic Authority which initially objected to the proposal (but subsequently issued general terms) and the Department of Environment and Conservation and Tweed Shire Council, which did not state a position. The Department also received two petitions during the public exhibition period, one objecting to the proposal, the other raising issues of concern.

The key issues raised in public submissions related to flooding impacts, water quality impacts, groundwater impacts and acid sulfate soils. A number of submissions also raised concern with regard to odour and noise impacts. Key issues raised in Government submissions related to groundwater impacts, acid sulfate soils, coastal hazards and site access. These issues have been addressed in section 6 of this report.

## 6 CONSIDERATION OF ENVIRONMENTAL ISSUES

The Department has undertaken a detailed review of information supplied by the Applicant in the Statement of Environmental Effects and additional information, and issues raised in submissions received in response to the public exhibition of the development application. In light of these considerations, the Department has been able to complete a screening of environmental planning and assessment issues associated with the proposed development. Issues have generally been considered in the context of the assessed environmental planning significance of matters outlined in the Statement of Environmental Effects, and the level of interest, concern or complexity of matters raised in submissions. A combination of these considerations has been used to develop the preliminary screening table reproduced as Table 1 (over). The primary purpose of the preliminary screening is to ensure focussed consideration of key issues associated with the proposed development, with an appropriate level of detail applied depending on the relative importance of the issue under consideration.

From review of the Statement of Environmental Effects, the Department has nominated environmental planning issues as either key, major, moderate or low significance in the context of environmental planning and assessment. In all cases, a conservative approach has been applied and in the case of any doubt, a precautionary approach has taken to ensure that at worst, issues have been overestimated rather than assigned a lower significance. As a general indication, levels of environmental planning and assessment significance have been applied as follows:

- **Key significance** – those issues of fundamental importance to the proposal. Resolution of these matters is considered fundamental to achieving acceptable environmental and public health and amenity outcomes, and in some cases may include tests or requirements that must be met by the proposal before it could be determined.
- **Major significance** – those issues representing the most significant environmental impacts associated with the proposal. Assessment has either indicated that relevant criteria or outcomes cannot be met, or compliance is predicted to be marginal. These issues also include matters for which there remains some doubt as to the assessment approach or outcomes.
- **Moderate significance** – those issues assessed as meeting relevant criteria or outcomes, but with a significant residual impact that needs to be mitigated and managed.
- **Low significance** – those issues that are either not associated with the proposal, clearly within acceptable environmental criteria, and/ or are the subject of well-established and applied environmental management measures. These issues also include those matters that could be easily and effectively addressed through conditions of consent, should the Minister determine to approve the proposed development.

All issues identified as having moderate, major or key significance as a result of the Department's consideration of the Statement of Environmental Effects have been carried forward for further assessment. In addition, issues raised in submissions have been considered both in the context of the frequency of occurrence and the level of concern expressed. Similar definitions have been used to characterise the significance of issues raised in submissions:

- **Key significance** – issues raised in the majority of submissions, issues representing primary public concern or the subject of detailed public comment or criticism.
- **Major significance** – issues raised in most submissions or subject to specific comment on a fundamental component of the proposal.
- **Moderate significance** – issues raised in detail in some submissions or as a general statement across the majority of submissions.
- **Low significance** – not raised in submissions, or only noted in a cursory manner.

Regardless of the assessed significance of issues from the Statement of Environmental Effects, any matter identified as being of major or key significance from public submissions has been carried forward for further detailed assessment. Preliminary screening, including comments on the screening and identification of matters for further assessment, is outlined in Table 1.

**Table 1.** Screening of Environmental Impacts for Detailed Consideration

Issue	Assessed Environmental Significance	Assessed Submissions	Comment
Water Quality Impacts	Moderate significance	Major significance	<p>The Applicant proposes to obtain fresh seawater via a direct underground pipeline that is to be constructed from the main site to Dreamtime Beach. Effluent from the operations at the facility is to be discharged via an underground pipeline to the Kingscliff Wastewater Treatment Plant (WWTP). Concern has been raised in a number of submissions regarding the quality of water being discharged via the WWTP to the Tweed River. The Environment Protection Authority has issued general terms of approval outlining the water quality limits that must be met by the Applicant prior to the discharge of effluent off-site. The Department is satisfied that the recommended conditions of consent impose measures to ensure that water quality impacts from the proposal are adequately managed and monitored, should the Minister determine to approve the development.</p> <p><b>Carried forward for further assessment – section 6.1</b></p>
Flooding Impacts	Moderate significance	Major significance	<p>The Applicant undertook an assessment of the impact of the proposed development on flooding in the locality. The Applicant’s assessment concluded that the increase in flood levels is limited (between 1 to 5cm increase) and occurs on cane land and Melaleuca Station located west of the site. A similar increase occurs immediately south of the bund and is contained within the property of the development site. Council has reviewed the flood modelling and indicates that the proposed development would not have a significant adverse flooding impact when looked at in isolation or when looked at in combination with other possible future developments in the locality that require filling. In addition, Council notes that the bund wall should be increased by 0.4m to 4.0m AHD to provide sufficient freeboard above the 1 in 100 year flood. Should the Minister approve the development, the Department recommends this condition be reflected in the recommended conditions of consent.</p> <p><b>Carried forward for further assessment – section 6.2</b></p>
Traffic Generation and Transport Impacts	Moderate significance	Moderate significance	<p>At full-scale production, the aquaculture facility is predicted to employ up to 60 staff during each shift with up to 6 general delivery vehicles (12 two-way movements) per day and occasional trips from salespeople. The Applicant proposes to access the site via Melaleuca Road which intersects the Pacific Highway interchange at the Tweed Valley Way. The RTA raised concern regarding the use of this access route particularly in regards to safety and suggested the Applicant instead investigate options to travel to the east to Crescent Street. However, it should be noted that there is current no through road connection along this route. Following several meetings between various Government authorities and the local member, a solution was agreed upon which allowed the Applicant to use Melaleuca Road to access the site following the implementation of a comprehensive Traffic Management Plan and/ or significant upgrades to the intersections to preserve the safety of road users and staff. It is recommended these requirements be incorporated into any development consent, should the Minister approve the proposed development.</p> <p><b>Carried forward for further assessment – section 6.4</b></p>

Issue	Assessed Environmental Significance	Assessed Submissions	Comment
Groundwater and ASS impacts	Moderate significance	Moderate significance	<p>The Applicant initially proposed to excavate the borrow pit to a depth of approximately -2.5m AHD, intercepting groundwater and disturbing Acid Sulfate Soils (ASS). The Department raised concern with the proposed depth of excavation, particularly due to potential impacts on groundwater as a result of disturbing ASS. As such, the Applicant revised the scope of the excavation pit such that it would only excavate to a depth of approximately 0.5m below the surface (and at least 30cm above the groundwater) so as not to disturb any ASS or potential ASS. The Department is satisfied with the revised scope.</p> <p>The Department recommends the Applicant prepare an ASS Management Plan should further testing reveal ASS will be disturbed during construction of the development.</p> <p>With regards to the pumping station at Dreamtime Beach, soil investigations determined that it would intersect the groundwater. The Department's regional office has issued General Terms of Approval indicating the conditions under which it would be prepared to issues a licence for dewatering. These conditions include a requirement for a management plan and limits on the volume of water that can be extracted. Should the Minister determine to approve the proposed development, the Department recommends these conditions form part of the development consent.</p> <p>The Department received a number of submissions that raised concern with the potential for seawater to leak into the groundwater and therefore impact upon the surrounding agricultural land. In response to this, the Applicant now proposes to store seawater in a dual lined pond at the main aquaculture facility with associated monitoring instruments to test for leaks. The Department is generally supportive of the monitoring proposed and recommends a formal monitoring program be required if the development is approved. The Department also recommends a system be put in place that will enable the Applicant to determine whether the seawater supply pipeline is leaking, and importantly, repair the leak.</p> <p>A number of submissions also expressed concern with the depth of the borrow pit and the exposure of ASS. As noted above, subsequent modifications to the proposal have reduced the potential for this to occur. The Department is satisfied that the proposed modifications coupled with the recommended conditions of consent ensure that the proposed development would not impact upon ASS and groundwater.</p> <p><b>Carried forward for further assessment – section 6.3</b></p>

Issue	Assessed Environmental Significance	Assessed Submissions	Comment
Coastal Hazards	Low significance	Moderate significance	<p>Dreamtime Beach is recognised as an area that is subject to considerable and dynamic fluctuations from storm impacts and littoral transport of sand. The extent of the impact of these is defined in the <i>Tweed Shire Coastline Hazard Definition Study 2001</i>. The proposed seawater pumping station was initially located inside the immediate hazard line and therefore subject to being damaged from storms etc. The Department considered this unacceptable and required the Applicant to relocate the pumping station outside the immediate hazard line. In consultation with various Government authorities and representatives of the community, the development application was modified with the pumping station now located outside the immediate coastal hazard area. The Department is satisfied with this location.</p> <p>In order to obtain fresh seawater, the proposed intake pipeline would still need to be located within the immediate hazard area and therefore, could be damaged in the event of a severe storm. To address this, the Department recommends the Applicant prepare and implement a management plan that details procedures to be undertaken in the event of an emergency as well as setting out routine inspection and maintenance requirements.</p> <p>The Department is satisfied that suitable modifications have been made to the seawater intake infrastructure to minimise and where necessary, manage any impacts arising from coastal processes. Under delegation, concurrence under the <i>Coastal Protection Regulation 2004</i> has been granted for the Applicant to construct and maintain the proportion of the seawater intake and associated infrastructure located seaward of Marine Parade, Kingscliff, subject to conditions.</p>
Noise Impacts	Low significance	Moderate Significance	<p>The SEE presents a noise impact assessment of construction and operation activities at the main development site that demonstrated that noise criteria established through the <i>Industrial Noise Policy</i> could be met at all nearby residences. The Applicant did not, however, model the predicted noise generated by the construction and operation of the pipeline and pumping station. This was considered justified as they are proposed to be located underground. The Department received several submissions expressing concern that the pumphouse would be noisy, particularly if cited aboveground.</p> <p>In its General Terms of Approval, the EPA stated the Applicant must provide detailed design with its application for a licence that demonstrates the pumphouse will meet the criteria specified under the INP. This has been reflected in the Department's recommended conditions of consent. These conditions also recommend the Applicant undertake noise monitoring of the pumphouse once it is in operation to test the predictions and if necessary, make adjustments to the operation to ensure compliance.</p> <p>The Department recognises that in general, the proposed development is unlikely to be a nuisance during typical construction and operation activities. The Department considers that conditions could be imposed on the development such as limiting construction hours and timing noisy activities to occur during the day as well as implementing a complaints registers and management plan to address potential noise impacts, should the Minister approve the proposal.</p>

Issue	Assessed Environmental Significance	Assessed Submissions	Comment
Waste Generation and Management	Low significance	Moderate significance	<p>Where possible, the Applicant states that construction waste will be recycled or otherwise disposed off-site as inert waste.</p> <p>Effluent generated by the development will be treated to meet standards set by the EPA prior to discharge via an underground pipeline to Council's WWTP. This issue is discussed in greater detail in section 6.1 of this report.</p> <p>Effluent sludge and domestic waste generated by the proposed facility will be recycled where appropriate and disposed of to facilities that may lawfully accept the waste.</p> <p>Waste feed would be collected from raceways and stored in refrigerated containers prior to off-site disposal.</p> <p>The Department received a small number of submissions that raised concern regarding waste management, particularly the potential for odour generation from waste feed. As noted, all wet waste would be stored in refrigerated containers prior to off-site disposal thereby minimising the potential for odour.</p> <p>The Department is satisfied that issues relating to waste management could be adequately addressed through the recommended conditions of consent, including measures to ensure adequate refrigerated storage is available to store feed and putrescible waste prior to off-site disposal.</p>
Air Quality Impacts	Low significance	Moderate significance	<p><u>Dust</u></p> <p>The Department is satisfied that dust generated by the development during construction could be managed through well-known and commonly applied mitigation measures such as water sprays, and water carts etc. The Department recommends these requirements be included in any consent, should the Minister determine to approve the proposed development.</p> <p><u>Odour</u></p> <p>All activities with the potential to generate odours, such as the preparation of food and cleaning of raceways, would be carried out within enclosed structures. Further, all wet waste would be collected and stored within closed containers under refrigeration prior to off-site disposal. As such, the potential for odour impacts outside the premises is low.</p> <p>A number of submissions were received from members of the public which stated that the development would emit offensive odours and that an odour assessment report should be undertaken to determine the extent.</p> <p>The Environment Protection Authority did not request any further information from the Applicant in relation to odour, however, its general terms of approval recommended the Applicant provide adequate refrigerated storage for feedstock and waste. The Department is supportive of the measures proposed by the Applicant to manage odour at the site and is satisfied that the potential for odour emissions to project beyond the boundary of the site is minimal. Should the Minister determine to approve the development, the Department recommends conditions be imposed that reinforce the commitments made in the SEE and incorporate the EPA's general terms.</p>

Issue	Assessed Environmental Significance	Assessed Submissions	Comment
Socio-Economic Impacts	Low significance	Moderate significance	<p>The proposed aquaculture facility is located on approximately 148 hectares of land, however, would only occupy approximately 68 hectares of this property at full production. A number of submissions, including a joint submission from the NSW Sugar Milling Cooperative and NSW Sugar Cane Growers Association objected to the proposal on the basis that cane land, important to the survival of the Condong Mill, would be lost. The submission from the Department of Primary Industries recognised that whilst the importance of the land to the cane industry needs to be considered, the site requirements of this aquaculture development necessitate its location on land similar to the proposed site. Additionally, the DPI notes the impact of the development on the cane industry is mitigated by locating the facility on the edge of the cane production area and the provision of the remainder of the property (approximately 80 hectares) for agricultural production. The Applicant has indicated that it would retain the sugar cane entitlements on the property and would make available the remainder of the property for use in sugarcane farming. The Department of State and Regional Development expressed support for the proposal and stated that it provided comparative economic benefits over caneland.</p> <p>The flora and fauna assessment report identifies that cane had previously been grown on the land where the facility is to be located but according to the landowner, has remained fallow due to poor returns from cane. Other parts of the site continue to grow sugar cane. Under the Department of Primary Industries' <i>Agricultural Land Classification</i> Guideline and associated <i>Rural Land Capability Mapping</i>, the proposed aquaculture site is located on Class 3 and Class 4 Agricultural Lands. Such land is identified as suitable only for grazing and seasonal cultivation (Class 3 only) mainly due to edaphic or environmental constraints. The Department is therefore satisfied that the proposed development would not lead to a loss of prime agricultural land.</p> <p>Additionally, the Department highlights that the proposed aquaculture development is permissible with development consent. It is consistent with the objectives of the 1(a) and 1(b) rural zones which are to enable the ecologically sustainable development of land that is suitable primarily for agricultural or associated development and to primarily protect agricultural land from fragmentation but allow development compatible with agricultural activities, respectively.</p> <p>The proposed development has the potential to create up to 200 full-time positions with flow-on effects expected for other supporting industry in the local area. The Department recognises the technology and educational benefits the proposed development would bring to the area, with the Applicant highlighting the potential for developing partnerships with Universities and TAFE in the future.</p> <p>Overall, the Department considers that the benefit the proposed development would bring to the local region would offset any potential impact resulting from the loss of cane land.</p>

Issue	Assessed Environmental Significance	Assessed Submissions	Comment
Disease Management	Low significance	Low significance	<p>In the initial stages of the development, the Applicant proposes to obtain broodstock from Queensland. The Applicant states that all broodstock brought to site would be inspected for disease and undergo a prophylactic treatment via dipping before being transported to a quarantine room prior to transfer to the main farm. The Applicant advises that the seawater entering and exiting the system would be physically separated from the rest of the operations on site and treated prior to disposal off-site.</p> <p>The Applicant advises that there would be no genetic modification of any animals on site, however, it is proposed to domesticate the bay lobster using traditional breeding practices to minimise the potential for the introduction of disease and reduce the reliance on obtaining wild stock.</p> <p>Importantly, the systems in each area of the facility are modular and so can be isolated in the event of a disease outbreak. All water is sterilised prior to disposal.</p> <p>The Department received a small number of submissions that raised issues regarding the introduction of disease, particularly from the importation of squid.</p> <p>In its GTAs, the Department of Primary Industries recommended procedures to be undertaken in the event of a disease outbreak and the Department recommends these be incorporated in any consent for the proposal.</p> <p>The Department is supportive of the measures outlined in the SEE to manage disease at the site and is satisfied that specific management measures such as the implementation of Disease Management Protocols, could be conditioned in any consent, should the Minister determine to approve the development.</p>
Impacts on Flora and Fauna	Low significance	Low significance	<p>The flora and fauna assessment identified that the site of the proposed aquaculture facility and pipeline route were dominated by sugar cane and weeds and showed clear signs of prior disturbance. Whilst no threatened species were identified on the subject site, it was noted that some may fly over the subject site. It was noted that the removal of weeds, planting of local native species and incorporation of landscaped buffers to adjacent cane farms would be of benefit. The Department is satisfied that the proposed development would not impact upon flora and fauna. Should the Minister determine to approve the proposed development, the Department recommends the implementation of a landscape management plan for the site.</p>
Impacts on Heritage	Low significance	Low significance	<p>A cultural heritage assessment was undertaken to support the development application. The report concludes that the proposed development would not result in the disturbance or damage of any areas or artefacts of cultural significance. The Applicant consulted with the Tweed Byron Local Aboriginal Land Council regarding the proposed development. The LALC noted that because the pipeline route was along a road reserve and the main site had little or no archaeological potential, it did not have any concerns with the proposal. The Department is satisfied that the proposed development would not impact upon cultural heritage. The Department did not receive any submissions in relation to cultural heritage.</p>

Issue	Assessed Environmental Significance	Assessed Submissions	Comment
Visual Amenity Impacts	Low significance	Low significance	<p>The Applicant provided limited information on the design and finishes for the buildings proposed on the main site. The Applicant did, however, note that the majority of buildings would look similar to a 'greenhouse' style building. As discussed in section 3.1, the Department recommends the final finishes for the building be discussed with Council. The Applicant also provided a number of photos identifying the view of the property from vantage points around the proposed site. In general, the photos reveal that distant views of the site would be available from most locations, however, it is generally interrupted by vegetation in the foreground. The proposed development would also include substantial landscaping in and around the perimeter of the site to assist in buffering the site.</p> <p>The Department received a small number of submissions that raised concern regarding the impact of the proposed development on the visual amenity of the area.</p> <p>The Department notes that the majority of buildings are a greenhouse style that would be in keeping with the rural nature of the area. The Department is generally satisfied that the proposed development would not present a significant visual amenity impact and that any issues could be satisfactorily addressed through conditions of consent, should the Minister approve the development.</p>

## 6.1 Water Quality Impacts

### Applicant's Position

#### *Effluent Management*

The Applicant states that seawater used in the facility would be exchanged at an average rate of 5% per day (which equates to 600 cubic metres per day for Stage 1 rising to 1800 cubic metres per day at Stage 3). The waste seawater would be treated at the site's water treatment facility prior to discharge from the site. Specific details of how the treatment facility would operate is provided in the SEE, the key outcome being that water would be treated so as to meet stringent water quality limits (discussed further below) prior to discharge from the site. Treated effluent would then be conveyed via a constructed pipeline to the Kingscliff Wastewater Treatment Plant (Kingscliff WWTP) which is licenced under the *Protection of the Environment Operations Act 1997*, where it would be combined with the plant's wastewater prior to final release at the existing outfall at Jenner's corner on the Tweed River.

Waste material filtered from the effluent (referred to as sludge) would be treated with a flocculant and filtered (captured water being passed back through the water treatment facility). Coagulated sludge would then be pumped to a storage area and stabilised with lime prior to off-site removal by a licensed contractor.

The Applicant states that it would treat seawater to meet the criteria set by the EPA for the new Kingscliff WWTP (refer Table 2 below). In particular, the Applicant would discharge treated seawater with a total nitrogen concentration of less than or equal to 5mg/L and a total P concentration of less than or equal to 0.3mg/L. Treated seawater would be sampled prior to leaving the site to ensure it complies with the specified limits.

The impact the proposed development would have on the total load of nutrients, notably nitrogen and phosphorus on the Tweed River has been addressed in the SEE. Overall, the Applicant states that the proposed development would contribute 1.1 tonnes per year of nitrogen at Stage 1 and up to 3.3 tonnes per year of nitrogen at Stage 3. This represents less than 1% of the nitrogen input from diffuse sources (determined as 383 tonnes/ year in 1996).

At Stage 1, the Applicant predicts it would contribute 70kg per year to the phosphorus load in the Tweed River, rising to 210kg/ year at Stage 3. The phosphorus input in to the River from diffuse sources was determined to be 25.8 tonnes per year in 1996. On this basis, the proposed development is predicted to contribute less than 1% to the total phosphorus load in the River.

The Applicant considers the contribution of treated seawater from the proposed facility to be small and would be unlikely to significantly impact on the EPA's protection of aquatic ecosystem objectives identified under the *Water Quality and River Flow Interim Environmental Objectives*.

#### *Stormwater Management*

The Applicant highlights that as part of the application, it proposes to capture and store roof runoff for use at the site (with a storage capacity of 15 ML) with any overflow being directed over the bund walls via lined spillways and open drains to meet up with existing drainage canals. These drainage canals would be cleaned out and extended, as necessary, to ensure adequate performance.

Rainwater runoff on pavements etc. would be directed to a series of collection pits and discharged through the bund via piping fitted with non-return flaps or valves. In circumstances where an external flood rises and causes these to shut, the Applicant states a series of automatic pumps would pump the water over the bund wall to join the flood outside.

### Issues Raised in Submissions

A number of submissions raised concern that the proposed on-site stormwater management would impact upon adjacent cane land and drainage lines on those properties. In particular, the proposed development would increase the impervious surface of the area (approximately 23 hectares of impervious structures), thereby resulting in more runoff and greater stormwater flows in the channel. Should adjacent properties not be able to adequately drain their sugarcane fields, the sugarcane could perish and therefore jeopardise their livelihood. The Department of Primary Industries sought clarification on the impact of the proposal on the local drainage pattern.

Numerous submissions also expressed concern that the proposed development would lead to a further decline in the water quality of Tweed River.

### Department's Position

#### *Effluent Management*

The Department notes concern raised in a number of public submissions regarding the impact the proposed development would have on the water quality of the Tweed River. Data collected over the last 10 years at various points along the Tweed River has shown that on average, the water quality of the River meets the interim objectives set by the EPA in relation to protection of the aquatic environment (the most stringent objective) for total nitrogen concentration (objective, 0.5mg/L, measured 0.47 mg/L), but that the average total phosphorus concentration currently exceeds the objective of 0.05mg/L (measured 0.06mg/L).

The proposed development would contribute less than 1% to the total load of phosphorus and nitrogen in the Tweed River and the Department is satisfied that this contribution would not impact upon the water quality of the Tweed or its capacity to achieve the objectives set in the EPA's report. Neither the EPA nor Council raised concern regarding the potential impact of the proposal on water quality. The EPA did, however, provide its general terms of approval indicating the water quality discharge limits the proposed development would be required to comply with prior to discharge from the site (see Table 2 below).

These limits are generally consistent with the limits that will be imposed on the new Kingscliff WWTP which were set to promote compliance with the water quality objectives (such as primary and secondary recreation contact and protection of aquatic ecosystems) for the Tweed River as outlined in the EPA's *Water Quality and River Flow Interim Environment Objectives*. The Department notes that the 100% allowable concentration limit is slightly higher than the new Kingscliff WWTP, however, considers this acceptable given the treatment plant would discharge a considerably larger volume of effluent per day (6 megalitres during dry weather flows) compared to the proposed aquaculture facility (1.8ML at full operation).

**Table 2.** EPA's recommended water quality discharge limits from the aquaculture facility (with criteria for new Kingscliff WWTP provided for comparison)

Pollutant/ Parameter	Units of Measure	Bay Lobster Aquaculture Facility		New Kingscliff WWTP Concentration Limits
		90% Allowable Concentration Limit	100% Allowable Concentration Limit	
Biochemical Oxygen Demand (BOD)	mg/L	10	20	10
Total Suspended Solids (TSS)	mg/L	15	30	15
Total phosphorus (TP)	mg/L	0.3	1	0.3
Total nitrogen (TN)	mg/L	5	20	10 (design target 5)
Ammonia		< 1	5	< 1
Oils and Grease		2	6	10

Faecal Coliforms		200	600	100
pH	-	6.5 – 8.5	6.5 – 8.5	6.5 – 8.5

Should the Minister determine to approve the proposed development, the Department recommends the EPA’s general terms in relation to the water quality limits, be incorporated in to the recommended development consent conditions. Other recommendations for inclusion in the consent include:

- restrictions on the location of the effluent discharge point;
- limits on the volume of treated effluent discharged from the site;
- implementation of a stringent water quality monitoring program to ensure the volume and concentration limits are being met; and
- implementation of a Water Management Plant that includes requirements for the management of process water and effluent at the development site.

*Stormwater Management*

The Department is supportive of proposed measures to capture and reuse roof water at the site and notes the positive benefit of reducing the volume of stormwater required to be discharged from the site. The Department however, recognises the concern raised in a number of submissions regarding the impact that stormwater discharged from the site would have on adjacent property and in particular, adjacent sugarcane fields.

Since the application was lodged, the proposed on-site borrow pit has been modified and the Applicant now proposes to use the borrow pit as a stormwater detention basin for the site. All surplus runoff would now be directed to the borrow pit prior to discharge from the site to Rob’s drain (located to the south of the facility) (refer Figure 3). Importantly, the Applicant highlights that the borrow pit would only be used to temporarily store water and would be designed so it can be completely drained. The Department considers that the proposed measures to control stormwater runoff from the site would ensure that adjacent properties are not adversely affected by the proposal.

To reinforce this, the Department recommends a condition be imposed that stipulates the development must not lead to an increase in the rate of flow of stormwater discharged from the site over and above pre-development flow conditions, should the Minister approve the proposal. The Applicant should also ensure that such works do not reduce the capacity of neighbouring properties to discharge runoff from their properties and this is reflected in the recommended stormwater management plan.

The Department recommends a number of other conditions be imposed to control and manage potential water quality impacts including: implementation of a detailed stormwater management plan for the site; implementation of an Erosion and Sediment Control Plan to address potential impacts resulting from the construction of the facility, including the construction of the pipelines and seawater pumping station at Dreamtime Beach; and installation of a “shake down” area for all construction vehicles exiting the site, having had access to unpaved areas.

The Department considers that through the measures proposed to be implemented by the Applicant and the stringent recommended consent conditions (incorporating the general terms of the DEC), potential water quality impacts associated with the development would be adequately managed.

**6.2 Flooding Impacts**

**Applicant’s Position**

The Applicant considers one of the key issues affecting the viability of the proposed development is the impact of flooding on the development and the impact of the proposed development on the flood plain. To protect the aquaculture facility from flooding (up to a 1 in

100 year ARI flood), the Applicant proposes to construct a bund wall around the perimeter of the facility with material obtained from excavations on the site. In doing so, the Applicant notes that the proposed development will disrupt the current flooding regime of the flood plain.

To this end, the Applicant undertook a flood impact assessment to determine the impact of the development on peak flood levels and the cumulative impact of the development when considered in tandem with future development proposed for the floodplain. The flood impact assessment was carried out using four different scenarios: the impact of the development in isolation; the impact of other cumulative development; the impact of cumulative development plus the aquaculture facility; and the contribution the aquaculture facility makes to the flood change when considered with other cumulative development. Figure x (1.1 in App N) identifies the proposed development and the location of future development in the floodplain that will influence the flood regime.

With the proposed development in isolation, the model predicted there would be up to a 7cm increase immediately south of the bund wall (located within the DA boundary) and an increase of up to 2cm to the west of the Pacific Highway in a 1 in 100 year flood event. The impact of the development on property to the east was negligible (less than 1 cm) with the majority of land to the east experiencing a small decrease in flood height (less than 1 cm).

In contrast, impacts from the cumulative development would lead to increases of up to 10 cm over much of the flood plain, with a decrease of up to 55 cm from Wommin Bay Road to north of Wommin Bay Crescent.

When the proposed development is considered with other future development in the flood plain, the flood level is predicted to increase by up to 10 cm in and around Chinderah Road, up to 8cm from the Pacific Highway to Stotts Island, up to 14 cm immediately south of the bund wall and a decrease of up to 55 from Wommin Bay Road to north of Wommin Bay Crescent. However, the proposed aquaculture facility contributes only a small proportion to the overall flood impact with an impact of up to 6cm immediately south of the bund wall, up to 2 cm immediately west of the Pacific Highway and up to 1cm further west towards Stotts Island.

### **Issues Raised in Submissions**

The Department received a small number of submissions that raised concern with the impact of the proposed development on adjacent sugar cane, specifically that young sugar cane had a high mortality rate when exposed to long periods of inundation and that any alteration to the flood pattern that increases inundation times would be extremely detrimental.

Council considers that the proposed development would not significantly impact upon the flooding regime of the area and noted that whilst the flood assessment did not specifically address the impact of the development on the length of inundation from the flood, it considered that it would be unlikely to affect it in any significant manner. The Council did however, note that the bund wall would need to be raised to 4.0M AHD to provide a freeboard of at least 0.4m for the 1 in 100 year ARI flood as the predicted 1 in 100 year flood height is 3.6m at this site and not 3.3m as stated in the SEE. Overall, Council's report stated that the proposed development would not have a significant adverse flooding impact when looked at in isolation or when looked at in combination with other possible developments in the area.

The Department of Primary Industries did not raise any concern with the proposed development in terms of flooding impacts.

## **Department's Position**

The Department acknowledges that the proposed development would have an effect on the flooding pattern of the area were it to be approved. However, the Department considers that the overall impact of the proposal is relatively minor when placed in the context of the peak flood heights in the area. In particular, the predicted 1 in 100 year flood level at the proposed development site is 3.6m AHD. As noted above, the proposed bund wall would result in a 2cm increase immediately west of the Pacific Highway, in the vicinity of Melaleuca Station. This represents less than a one percent increase in flood height at the site. Indeed Council's report considers that it should not cause any significant increase in flood damages at this location.

The Department received a number of submissions that raised concern regarding the impact the proposed development would have on adjacent cane land particularly as a result of the change in the flood pattern of the area. Indeed, it is noted that the flood assessment provided in the SEE did not analyse the impact the proposed development would have on flood inundation times. However, a report provided by Tweed Shire Council stated that given the predicted increase, it did not consider that the proposed development would significantly impact upon the time of inundation. Further, studies have shown that sugar cane can withstand periodic inundation with little or no ill effects provided drainage lines are adequate. As noted in section 6.1, once the flood has subsided, the Applicant's stormwater management would ensure that runoff from the site did not exceed pre-development flows and adjacent cane land would be able to be drained as normal.

As indicated in Council's report, the predicted flood height at the development site is 3.6m AHD and not 3.3m AHD as quoted in the SEE. As such, should the Minister determine to approve the proposed development, the Department recommends a condition be imposed that requires the Applicant to construct the bund wall to 4.0 m AHD to protect the aquaculture facility against floods of up to a 1 in 100 year ARI level.

The Department is satisfied that the proposed development would not significantly impact upon the flooding pattern of the area by protecting itself against the 1 in 100 year flood. This position is supported by Tweed Shire Council.

## **6.3 Groundwater Impacts and Acid Sulfate Soils**

### **Applicant's Position**

#### *On-site Excavation*

The Applicant proposes to protect the site from flooding using a bench and bund wall. This would require the excavation of approximately 27ha of the site to an average depth of 2.5 metres for all three stages. Preliminary geotechnical studies indicated that groundwater would be intercepted at approximately 1.0 metre below the ground's surface. As such, the Applicant suggested that the groundwater table may need to be locally drawn down to facilitate excavation, but that due to the sandy nature of the soils, the groundwater would be anticipated to return to equilibrium levels quite quickly.

The geotechnical report also noted the presence of acid sulfate soils at the site and states that these would require treatment prior to disposal or re-use as engineered fill on site.

#### *Seawater Infrastructure*

The Applicant states that the proposed seawater supply pipeline route to Dreamtime Beach would traverse Class 3 and Class 2 acid sulfate soils as identified under the *Tweed Local Environmental Plan 2000* (Tweed LEP). The Applicant states that the proposed pipeline would have a maximum depth of less than 1 metre below ground level through these soils.

The Applicant notes that as the area identified as Class 2 has been substantially filled in recent years with the residential expansion of West Kingscliff, the Applicant states that the

pipeline would not extend beneath the depth of fill. Accordingly, the Applicant considers that the excavations for the pipeline would not result in acid sulfate soils being exposed.

The Applicant proposes to store fresh seawater at the aquaculture facility in multiple ponds lined with High Density Polyethylene (HDPE) and covered with opaque greenhouse type structures. The HDPE liner is to prevent permeation of seawater into the groundwater.

The Applicant states that the HDPE liners are similar to that used to line landfills and have also been used in the storage ponds at the Applicant's facility at Bribie Island. The Applicant contends that in its 14 year experience with using these liners, the material has never failed and subsequently leaked. In the unlikely event a leak were to occur, the Applicant states that it would quickly be identified due to the evident loss of water from the covered ponds. To address any leaks, the Applicant states the water level in the affected pond would be drawn down so that the leak could be repaired.

### **Issues Raised in Submissions**

A number of submissions objected to the proposal on the basis that the raceways could leak resulting in seawater seeping into the groundwater. This in turn would impact upon farmers that rely on groundwater to irrigate their farms. Several submissions also noted that the seawater storage ponds could leak and expressed concern about the Applicant's ability to quickly detect and stop such leaks.

The Department received a number of submissions expressing concern that acid sulfate soils would be exposed during excavation activities at the site and that the acid generated would impact upon both surface and groundwater.

### **Department's Position**

The Department raised significant concern with the proposed design of the borrow pit, particularly in relation to potential impacts on groundwater and management of acid sulfate soils. In particular, the Department considered that an insufficient number of test bores were drilled on site to accurately predict the depth of groundwater and presence of ASS and hence the potential impact of the proposed borrow pit and sought further information in this regard.

Through negotiation with the Department, the Applicant reduced the scale of the proposed borrow pit by reconfiguring the flood protection at the site. In particular, the area of excavation would be reduced from 27 hectares to approximately 23 hectares and the depth of the borrow pit reduced to approximately 0.5m below the ground surface and at least 30cm from the watertable. This reduction is also likely to limit the potential for exposure of acid sulfate soils. The Department supports these modifications.

Should the Minister determine to approve the development, the Department recommends the Applicant implement an Acid Sulfate Soil Management Plan should further testing at the site reveal acid sulfate soils would be disturbed during construction of the development.

### ***Seawater Supply Infrastructure***

In response to issues raised in submissions, the Applicant has now modified the seawater storage ponds to provide extra protection against possible leaks. In particular, the Applicant now proposes to store seawater in a dual lined pond. The bottom layer would comprise a compacted clay layer, the top, HDPE, as previously proposed. Between these layers, the Applicant proposes to install conductivity probes that would be connected to the facility's control and monitoring system to enable rapid detection of any leaks and subsequent repairs to the pond. The Applicant highlights that by using a dual lined system, the potential for leakage into the groundwater is further reduced.

The Department supports the proposed changes, however, given the proposed monitoring technique has not previously been used in this type of system, the Department considers it appropriate that the Applicant still be required to undertake monitoring of the groundwater around the storage tanks, albeit at a lesser frequency than is usually applied, to provide another mechanism against which to test if the storage tanks are leaking. This is reflected in the Department's recommended conditions of consent.

The Department recognises that the seawater supply pipeline also has the potential to leak and recommends the Applicant implement a system that enables the detection of any leaks along the route and importantly, includes procedures to repair the leak.

The Department sought additional information from the Applicant in relation to the depth of groundwater at Dreamtime Beach. The Applicant provided this information indicating that as the caisson for the pumphouse would intersect the groundwater, it would need to locally draw down water in this area to install the equipment. The Department notes this work would require a licence under the *Water Act 1912* and has issued general terms in this regard. Should the Minister approve the proposed development, the Department recommends the Applicant submit a detailed hydrogeological report that includes information such as the extent of the cone of depression, the proposed dewatering pumping rate, likely volumes of groundwater to be extracted etc.

The Department considers that through the measures proposed to be implemented by the Applicant and through the stringent recommended development consent conditions, potential groundwater and acid sulfate soil impacts would be managed.

## **6.4 Traffic Impacts**

### **Applicant's Position**

#### *Traffic Volumes*

The facility is proposed to be developed in three stages. The first stage is expected to employ approximately 70 staff, increasing to approximately 135 for Stage 2 and up to 200 for Stage 3.

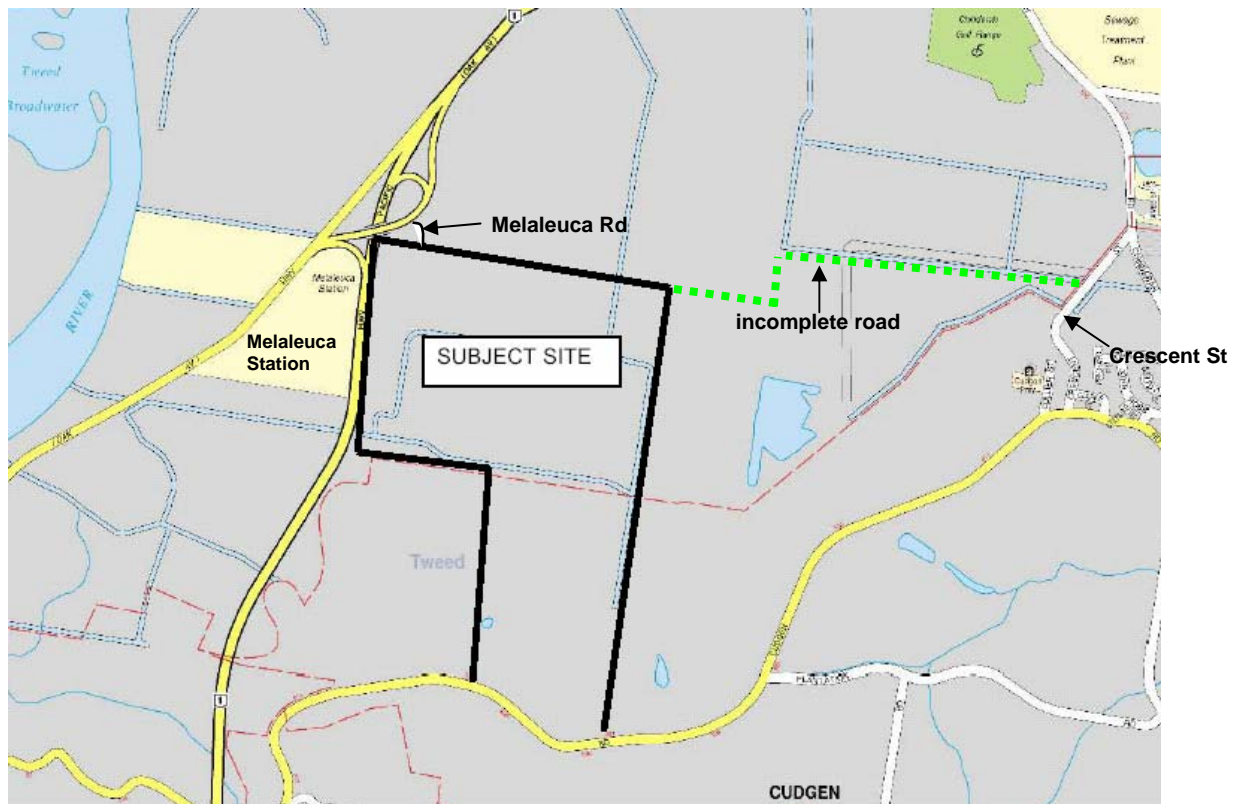
The Applicant proposes to operate the development 24 hours a day 7 days a week with 5 shifts per day. The shift times have not yet been determined, however, as a worst case scenario, the Applicant has assumed only three shifts per day with up to 60 staff for each shift at full production.

It is expected that between 5 and 6 delivery vehicles per day would visit the site with approximately 12 vehicles per day for visitors, anticipated to be travelling in the opposite direction to employee vehicles at the shift changeover period.

#### *Traffic Routes*

The proposed development site has frontage to the Pacific Highway. It is proposed to gain access to the Pacific Highway via a local road (Melaleuca Road) at the northern end of the site which intersects with the Tweed Valley Way interchange, providing ready access to the Pacific Highway and Tweed Valley Way (refer Figure 6).

**Figure 6.** Preferred (and recommended) site access to the Bay Lobster aquaculture facility at Cudgen.



### *Traffic Impacts*

The Applicant undertook an assessment of the proposed development at full operation using traffic volumes predicted for 2019. Using the conservative figures stated above, the proposed development would contribute less than 4% to peak hour traffic along the Pacific Highway.

The Applicant anticipates approximately 45 vehicles would enter the facility from the north and subsequently return home at the end of their shift. The Tweed Valley Way interchange does not cater for north bound traffic and as such, vehicles would be required to do a U-turn on the Tweed Valley Way at Melaleuca Station. The Applicant undertook an analysis to assess the impact of the proposed development on the U-turn at Melaleuca Station which indicated the intersection would perform between an “A” to “E” level of service. Notwithstanding, the Applicant concludes that the intersection would have satisfactory operating conditions and readily accommodate vehicle queues generated by the proposal.

The Applicant also undertook an analysis of the interchange to assess the impact vehicles entering and exiting the site from the local road (Melaleuca Road) on to the interchange would have on its performance. The analysis concluded that the intersections would operate between an “A” to “C” level of service.

The report recommended the existing intersection arrangement be upgraded to provide a left turn deceleration lane and taper (with left-turn island) to accommodate vehicle queues generated by the proposal. It would also allow vehicles turning left from the off-ramp to be separated from the through traffic and safely turn into Melaleuca Road.

### *Construction Traffic*

Traffic associated with the construction of the proposed development is not known at this stage, however, the Applicant considers it would be less than the traffic generated by the development at full production.

The Applicant states that the proposed upgrade to the interchange would occur prior to the commencement of construction and would therefore safely accommodate construction traffic.

### **Issues Raised in Submissions**

The Department did not receive any submissions from members of the public that raised issues with traffic associated with the development.

In its initial submission, the Roads and Traffic Authority stated that Melaleuca Road was not a public road but private land owned by the RTA. A right-of-carriageway provides access in favour of a number of properties to the east of the highway with the intention of providing access to this land for its current usage as sugarcane farming. The RTA stated that the proposed change of use would increase traffic movements and would be unacceptable to the RTA. It recommends that access to the property should be taken from the local road network to Crescent Street. However, following several meetings between the Applicant and Government authorities, the RTA agreed to permit the Applicant to use Melaleuca Road to access the site subject to stringent conditions.

### **Department's Position**

Access to the site is recognised as one of the key constraints to the viability of the proposed development. Whilst the Applicant maintained it had a legal right to use Melaleuca Road to gain access to the property, the RTA was concerned about potential conflicts that could arise between through traffic on the interchange and Pacific Highway and traffic associated with the development without necessary upgrades taking place. To address this issue, a number of meetings were held between various Government departments, Tweed Shire Council and the local member for Tweed.

In its initial General Terms of Approval, the RTA stated that it would permit the Applicant to use Melaleuca Road without requiring any upgrade to the U-turn Bay for a limited period, notionally 2 years, however, the Applicant would be required to pursue options to gain access to the east. Following the construction of the road to the east, access from Melaleuca Road would be prohibited. The Applicant raised concern with this restriction stating that it should continue to be allowed to use Melaleuca Road for traffic other than northbound traffic as this would not impact upon the flow of the Pacific Highway.

Following further negotiation, the RTA agreed to review its general terms of approval for the development. The revised general terms are summarised below:

- Melaleuca Road must be upgraded and sealed to cater for the development;
- connection of the development site to Melaleuca Road must be constructed in a manner so as it does not provide a through public road connection for the public or other developments;
- - a traffic management plan to protect vehicles turning left into Melaleuca Road from collisions with southbound through traffic must be implemented; or  
- a southbound left turn deceleration lane into Melaleuca Road from the Tweed Valley Way overpass must be provided; and
- - a traffic management plan for vehicles exceeding 9 metres in length undertaking a u-turn manoeuvre at the Melaleuca Station crossover must be implemented; or  
- the existing at grade crossover on the Tweed Valley Way at Melaleuca Station must be upgraded to cater for articulated vehicles. This includes construction of a U-turn Bay and acceleration lane. Retention and modification of the cane pad as may be necessary to maintain safe operation of the pad is also required.

Notwithstanding, the RTA maintains that the advantages of the eastern access to Crescent Street are worth considering and likely to be at least similar in cost to the works required above.

The Department recognises the need to maintain the safety and integrity of the Pacific Highway and to ensure that new development does not jeopardise these objectives. As such, should the Minister determine to approve the proposed development, the Department recommends the RTA's general terms be incorporated in to any instrument of consent for the proposal.

The Department considers that the conditions of the recommended instrument of consent provide suitable measures for the management of traffic associated with the proposed development.

## **7 CONCLUSION**

The Department has evaluated the DA in accordance with the matters for consideration listed under Section 79C of the *Environmental Planning and Assessment Act 1979* and is satisfied that:

- the proposed development is generally consistent with the provisions of the relevant planning instruments;
- the potential impacts of the proposal can either be mitigated or managed; and
- the proposal is generally in the public interest.

The Department considers that the proposed bay lobster aquaculture facility will have considerable economical, social and technological benefits at a local, regional and national level in the form of employment and investment as well as increasing Australia's export market.

Access to the site was recognised as one of the key constraints to the viability of the proposal. Considerable negotiation between the RTA, Tweed Shire Council, the Department, Applicant and other Government authorities was undertaken in order to facilitate a solution that was acceptable to all parties and in particular, did not jeopardise the safety of road users. The key outcome of these negotiations permitted the Applicant to gain access to the Pacific Highway via a connecting road that linked to the Highway interchange, subject to stringent management and/ or upgrades of the affected intersections.

The potential groundwater and acid sulfate soil impacts were also identified as key issues associated with the proposal. The Department was not satisfied that the proposed development could be constructed without jeopardising the groundwater resources. Accordingly, the Applicant revised the scope of the development, particularly the size of the site's borrow pit so that it would no longer intercept groundwater or acid sulfate soils.

The Department considers that the recommended conditions of consent provide a rigorous and strict framework for the management, monitoring and reporting on the construction and operation of the site. This includes requirements for the management of traffic, flooding, stormwater, effluent, groundwater, acid sulfate soils, noise, disease and odour and for the undertaking of independent environmental auditing.

Based on this evaluation, it is considered that the merits of the proposal warrant the granting of development consent, subject to the recommended conditions of consent.

## APPENDIX A –PROVISIONS OF ENVIRONMENTAL PLANNING INSTRUMENTS

Following is a consideration of the proposed Australian Bay Lobster aquaculture facility against the objectives and provisions of relevant environmental planning instruments.

<b>State Environmental Planning Policy No. 62 – Sustainable Aquaculture</b>	
<p><b>Aims of the Policy:</b></p> <p>(a) to encourage sustainable aquaculture in the State, namely, aquaculture development which uses, conserves and enhances the community's resources so that the total quality of life now and in the future can be preserved and enhanced</p>	<p>The proposed development is for tank-based aquaculture to produce commercial quantities of bay lobster</p>
<p>(b) to make aquaculture a permissible use in certain areas for which a comprehensive and integrated regional aquaculture strategy has been developed (being a strategy that incorporates the relevant Aquaculture Industry Development Plan under the Fisheries Management Act 1994 and the assessment regime for integrated aquaculture development), and</p>	<p>Refer to section 4.1 of this assessment report</p>
<p>(c) to set out the minimum site location and operational requirements for permissible aquaculture development (the minimum performance criteria)</p>	<p>The proposed development meets 11 out of 12 minimum performance criteria (see below). The implications of this are discussed in section 4.1 of the report.</p>
<p>(d) to establish graduated environmental assessment regime for aquaculture development based on the applicable level of environmental risk associated with the site and operational factors, and</p>	<p>The proposed development is categorised as a Class 2 development and is therefore non-designated. A SEE accompanied the DA.</p>
<p>(e) to apply the Policy in the first instance to pond-based and tank-based aquaculture development in the North Coast Region of the State following the preparation of a strategy for that kind of aquaculture development in that area.</p>	<p>The proposed development is located in the North Coast region of the State and is tank-based aquaculture.</p>
<p><b><u>Clause 7 – Pond-based and tank-based aquaculture permissible with consent</u></b></p> <p><i>This clause applies to development for the purposes of pond-based aquaculture, or tank-based aquaculture, to which this Policy applies</i></p> <p><i>A person may carry out any such aquaculture development with development consent if, in the opinion of the consent authority, it complies with the site location and operational requirements set out in Schedule 1 for the development (the minimum performance criteria)</i></p> <p><i>The requirements set out in Schedule 1 are minimum requirements and do not limit the matters a consent authority is required to take into consideration under the Act or the conditions that it may impose on any development consent</i></p>	<p>The proposed development is permissible with consent. Refer to section 4.1 of the assessment report and the Schedule 1 table below for further details.</p>

<p><u>Clause 10 – Consent Authority to take aquaculture industry development plan into consideration</u>  <i>In determining a development application for aquaculture development to which this Policy applies, the consent authority is to take into consideration such of the provisions of any AIDP as are relevant to the subject of the DA</i></p>	<p>Refer to sections 4 and 6 of the report.</p>
<p><u>Clause 13 – Categorisation of development having regard to project profile analysis</u>  <i>For the purposes of determining the level of assessment of applications for development consent under this Policy, the proposed aquaculture development is to be categorised in accordance with the opinion of the consent authority formed having regard to the relevant project profile analysis. The consent authority is not to consent to aquaculture development under this Policy unless it has first categorised the development in accordance with this clause.</i></p>	<p>Assessing the proposed development against the North Coast project profile analysis, the Department is satisfied that the development is classified as a Class 2 – non-designated development. Refer to section 4.2 of the report for further details.</p>

**Schedule 1 of SEPP 62**

Minimum Performance Criteria	Proposed Development Characteristic	Compliance
<b>Site Location Requirements</b>		
(1) Located in a region to which this Policy applies (the North Coast Region or Hunter and Central Coast Region)	The proposed development is located within the local government area of Tweed	Complies.
(2) For tank based aquaculture, located in areas zoned for rural purposes or industrial purposes	Development site is located on land zoned 1(a) Rural Zone, 1(b2) Agricultural Protection Zone, 5(a) Special Uses, Drainage and Sewerage Treatment and 6(a) Open Space	Majority of development site complies, including main site, but see section 4.1
(3) Not relevant to tank-based aquaculture		
(4) For tank based aquaculture, located within an area the mean elevation of which is above 1 metre AHD	Land sited between 0.4m and 1.4m AHD, the mean of which is above 1m AHD	Complies
(5) Not located within certain Acid Sulfate Soil's classes (EsO, EcO, EuO or Em)	Site is not located within the Acid Sulfate soil classes described in the SEPP.	Complies
(6) Not located within an area that is subject to flooding when growing 'high risk species'	Whilst the site is located within a flood-prone area, the site will be designed with flood protection works for a 1 in 100 year ARI flood and the proposed development is not growing species that are considered to be 'high-risk species' in the AIDP.	Complies
(7) Not located within: (a) areas dedicated or reserved under the NPW Act 1974; (b) marine parks or aquatic reserves; (c) vacant Crown Land (other than areas used only for access to water provided under a licence)	The pumphouse and part of the proposed pipeline are located on land owned by the Crown. The Department of Lands has issued landowners consent for these works which are for the provision of water.	Complies
<b>Operational Requirements</b>		
(8) Species of fish cultivated must be	The proposal will cultivate <i>Thenus</i>	Complies.

consistent with the relevant Aquaculture Industry Development Plan (AIDP)	<i>orientalis</i> and <i>Thenus indicus</i> which are identified as suitable species in the AIDP.	
(9) Ponds, raceways or dams must be capable of being drained or pumped and then completely dried	The proposed raceways are capable of being completely drained and dried if necessary, eg. For cleaning and maintenance or if disease outbreaks occur and tanks have to be sterilised.	Complies.
(10) No discharge of freshwater used to cultivate or keep fish or marine vegetation to natural waterbodies or wetlands	Proposal is for marine fish aquaculture	Not relevant
(11) All saline water discharged from a farm must be held in a reconditioning system for a minimum of 24 hours prior to discharge and must be returned to the tidal reaches of the waterway.	The emergency holding pond has the capacity to hold treated seawater for a minimum 24hours prior to discharge from the site, if required	Complies.
(12) All outlets from ponds, tanks and other facilities must be screened to avoid the escape of fish	All tanks, inlets and outlets are proposed to be screened in accordance with licence requirements in order to prevent the escape of fish.	Complies.

<b>North Coast Regional Environmental Plan</b>	
<p><i>Rural Development</i>  <u>Agricultural Resources</u>  <i>The objectives of this Plan in relation to agricultural resources are:</i></p> <ul style="list-style-type: none"> <li><i>to conserve the productive potential of agricultural land;</i></li> <li><i>to provide for new forms of agricultural development and changing patterns of existing agricultural development,</i></li> <li><i>to ensure that commercial agriculture is not affected adversely by incompatible uses which impair its long term sustainability, and</i></li> <li><i>to ensure that industries and services that support agriculture are not disrupted</i></li> </ul>	<p>The proposed development is generally consistent with the objectives of this Plan in relation to agricultural resources. The proposed development is for the primary production of bay lobster. Almost half the development site will remain available for use for other agricultural practices such as cane farming.</p>
<p><u>Clause 12 – Development Control – impact of development on agricultural activities</u>  <i>The Council shall not consent to an application to carry out development on rural land unless it has first considered the likely impact of the proposed development on the use of adjoining or adjacent agricultural land and whether or not the development will cause a loss of prime crop of pasture land</i></p>	<p>The proposed development will not impact upon adjacent agricultural land. The proposed development is not located on prime crop or pasture land. Refer Table 1 of report.</p>
<p><u>Catchment Management</u>  <i>The objectives of this plan in relation to fisheries and catchment management are to preserve and enhance fishery habitats and associated catchments, and to promote the sustainable use of natural resources</i></p>	<p>The proposed development would not impact upon any fishery habitats. Stringent water quality objectives must be met prior to discharge off-site. Aquaculture aims to reduce the pressure of wild stocks.</p>
<p><u>Clause 15 – Development Control – wetlands or fishery habitats</u>  <i>The council shall not consent to an application to</i></p>	<p>Refer to section 6 of this assessment report.</p>

<p>carry out development for any purpose, within, adjoining or upstream of a river or stream, coastal or inland wetland or fishery habitat area or within the drainage catchment of a river or stream, coastal or inland wetland or fishery habitat area unless it has considered the following matters:</p> <ul style="list-style-type: none"> <li>(a) the need to maintain or improve the quality or quantity of flows of water to the wetland or habitat,</li> <li>(b) the need to conserve the existing amateur and commercial fisheries,</li> <li>(c) any loss of habitat which will or is likely to be caused by the carrying out of the development,</li> <li>(d) whether an adequate public foreshore reserve is available and whether there is adequate public access to that reserve,</li> <li>(e) whether the development would result in pollution of the wetland or estuary and measures to eliminate pollution,</li> <li>(f) the proximity of aquatic reserves dedicated under the Fisheries Management Act 1994 and the effect the development will have on these reserves,</li> <li>(g) whether the watercourse is in an area of protected land as defined in section 21AB of the Soil Conservation Act 1938 and any measures to prevent soil erosion, and</li> <li>(h) the need to ensure native vegetation surrounding the wetland or fishery habitat area is conserved, and</li> <li>(i) the recommendations of any environmental audit or water quality study prepared by the Department of Water Resources or the Environment Protection Authority and relating to the river, stream, wetland, area or catchment</li> </ul>	
<p><u>Clause 30 – Coastal Development</u>  <i>The objectives of this plan in relation to coastal planning are to: enhance the visual quality of the coastal environment, provide for the appropriate recreational use of beaches, protect water quality of the coastal environment, minimise risks to people and property resulting from coastal processes, minimise changes to coastal processes resulting from development, and encourage retention of natural areas and regeneration of those natural areas which are already degraded</i></p>	<p>The Department is satisfied the proposal accords with these objectives. The proposed pipeline and pumphouse would be located underground and therefore would not be visible. The proposed development must meet stringent water quality limits before discharge off-site.</p>
<p><u>Clause 32B – Coastal Lands</u>  <i>(1) This clause applies to land within the region to which the NSW Coastal Policy 1997 applies.  (2) In determining an application for consent to carry out development on such land, the council</i></p>	<p>The Department has taken into account the relevant documents and is satisfied that the proposal accords with their objectives.</p> <p>The proposed development would not</p>

<p><i>must take into account a) the NSW Coastal Policy 1997, b) the Coastline Management Manual, and c) the North Coast: Design Guidelines.</i></p> <p><i>(3) The council must not consent to the carrying out of development which would impede public access to the foreshore.</i></p> <p><i>(4) The council must not consent to the carrying out of development: a) on urban land at Tweed Heads, Kingscliff, Byron Bay, Ballina, Coffs Harbour or Port Macquarie, if carrying out the development would result in beaches or adjacent open space being overshadowed before 3pm midwinter (standard time) or 6.30pm midsummer (daylight saving time), or b) elsewhere in the region, if carrying out the development would result in beaches or waterfront open space being overshadowed before 3pm midwinter (standard time) or 7pm midsummer (daylight saving time).</i></p>	<p>impede public access to the foreshore and would not result in overshadowing.</p>
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<p><b><u>Tweed Local Environmental Plan 2000</u></b></p>	
<p><b><u>Clause 4 – Aims of this Plan</u></b></p> <p><i>The aims of this plan relevant to this development include the need to give effect to the desired outcomes, strategic principles, policies and actions of the Tweed Shire 2000+ Strategic Plan and to encourage sustainable economic development of the area of Tweed, compatible with the area’s environmental and residential amenity qualities.</i></p>	<p>It is considered the proposed development is consistent with the objectives of the plan, providing a new, sustainable industry that has the capacity to bring economic wealth to the area.</p>
<p><b><u>Clause 5 – Ecologically Sustainable Development</u></b></p> <p><i>An objective of this plan is to promote development that is consistent with the four principles of ecologically sustainable development, including:</i></p> <p><i>(a) the precautionary principle</i></p> <p><i>(b) inter-generational equity</i></p> <p><i>(c) conservation of biological diversity and ecological integrity, and</i></p> <p><i>(d) improved valuation, pricing and incentive mechanisms</i></p>	<p>(a) The Department is satisfied that the proposal would not result in any serious or irreversible environmental impacts</p> <p>(b) The proposed development would provide additional employment for people in the area and industrial diversification. The proposed development has the potential to enhance the natural environment through landscaping that uses native species.</p> <p>(c) The proposed development is located on cane land and is largely devoid of native vegetation. Landscaping of the site would promote the rehabilitation of the area through planting of native species.</p> <p>(d) The proposed development would bring new technology to the area and result in greater exports from the region</p>
<p><b><u>Clause 8 – Consent Considerations</u></b></p> <p><i>(1) The consent authority may grant consent to development only if:</i></p> <p><i>(a) it is satisfied that the development is consistent with the primary objective of the</i></p>	<p>The proposed development is generally consistent with the primary objectives of the rural zones, however, it may not be with the 5(a) and 6(a) zones. Notwithstanding, it is considered that the</p>

<p><i>zone within which it is located</i></p> <p><i>(b) it has considered those other aims and objectives of this plan that are relevant to the development</i></p> <p><i>(c) it is satisfied that the development would not have an unacceptable cumulative impact on the community, locality or catchment that will be affected by its being carried out on the area of Tweed as a whole.</i></p>	<p>proposal accords with the other aims and objectives of these zones and given the pipeline and pumphouse would be located underground, would not have an unacceptable cumulative impact on the community by it being carried out.</p> <p>Additionally, under section 76A(8)(c) of the Act, where part of State significant development that would otherwise be prohibited but for this provision of the Act, the development may be carried out with development consent.</p>
<p><u>Clause 11 – Zone Table</u></p> <p>Zone 1(a) Rural Zone</p> <p>Zone 1(b2) Agricultural Protection</p> <p>Zone 5(a) Special Uses (Drainage) and (Sewage Treatment Plant)</p> <p>Zone 6(a) Open Space</p>	<p>Refer sections 4.1 and 4.3 of this report</p>
<p><u>Clause 13 – Development on uncoloured land on the zone map</u></p> <p><i>(1) Objectives – to enable the control of development on unzoned land, to ensure that it is compatible with surrounding development and zones and to ensure that development of certain waters takes account of environmental impacts and other users of the water</i></p> <p><i>(2) A person must not carry out development on unzoned land except with consent</i></p>	<p>Part of the proposed pipeline route is located on unzoned (uncoloured) land. Development on such land is permissible with development consent.</p>
<p><u>Clause 15 – Availability of Essential Services</u></p> <p><i>(1) Objectives – to ensure that development does not occur without adequate measures to protect the environment and community’s health and to ensure that development occurs in a coordinated and efficient manner</i></p> <p><i>(2) Consent must not be granted to the carrying out of development on any land unless: water supply, sewage and drainage facilities are available for that land and arrangements satisfactory to the consent authority have been made for the provision of that supply and those facilities</i></p>	<p>The proposed development is serviced by telecommunications and power. A rising main is to be constructed for sewer, undertaken to the satisfaction of Council. Rainwater tanks on-site would provide potable water.</p>
<p><u>Clause 22 – Development near Designated Roads</u></p> <p><i>(1) Objectives - to protect and improve the capacity, efficiency and safety of designated roads, and to prevent development on designated roads that would detract from the scenic attractiveness of the area of Tweed and to prevent or reduce the potential impact of traffic noise on development adjacent to</i></p>	

<p><i>designated roads.</i></p> <p><i>(2) This clause applies to land that:</i></p> <p><i>(a) has frontage to a designated road, or</i></p> <p><i>(b) relies on a designated road for its sole means of vehicular access, or ...</i></p> <p><i>(4) The consent authority may grant consent to development on land to which this clause applies only if it is satisfied that:</i></p> <p><i>(a) the development (because of its nature, appearance, cumulative effect or illumination, or the intensity or the volume or type of traffic likely to be generated, or for another similar reason) is unlikely to constitute a traffic hazard or materially reduce the capacity or efficiency of the designated road, and</i></p> <p><i>(b) the location, standard and design of access points, and on-site traffic movement and parking arrangements, would ensure that through traffic movement on the designated road is not impeded, and</i></p> <p><i>(c) the development, or proposed access to it, will not prejudice any future improvements to, or realignment of, the designated road, and</i></p> <p><i>(d) where the land is in Zone 1 (a), 5 (a), 7 (a), 7 (d), 7 (f), or 7 (l), the development is of a type that necessitates a location in proximity to the designated road for reasons other than only commercial advantage, and</i></p> <p><i>(e) the development is of a type that is not sensitive to traffic noise or, if it is, it is located or adequate measures are included to ameliorate any potential noise impact, and</i></p> <p><i>(f) the development would not detract from the scenic values of the locality, particularly from the point of view of road users, and</i></p> <p><i>(g) where practicable, access to the land is provided by a road other than the designated road, and</i></p> <p><i>(h) in respect of any application for commercial or retail development near the Pacific Highway in Zone 1 (a), 7 (a), 7 (d), 7 (f) or 7 (l), the development:</i></p> <p><i>(i) would not compromise the Highway's function as the North Coast's primary inter- and intra-regional road traffic route,</i></p> <p><i>(ii) would not contribute to the need to expend public money on the Highway to overcome the effects of ribbon</i></p>	<p>The proposed development has frontage to the Pacific Highway</p> <p>The RTA's general terms and recommended instrument of consent provide a suite of controls to control and manage traffic associated with the development to ensure the safety and efficiency of the Highway is not compromised.</p> <p>Refer to Section 6.4 of the report for further detail.</p>
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<p>development, and                  (iii) would not compromise highway safety and efficiency, and                  (iv) would not cause or contribute to the shifting of the retail/commercial foci of any town from the town centre to a highway-orientated site.                  (5)The RTA must take the matters listed in subclause (4) into consideration before granting concurrence to development on land to which this clause applies.</p>	
<p><u>Setbacks to designated roads</u>                  (1) Objective – to control development along designated roads                  (2) This clause applies to land within Zone No 1(a), 1(b), 1(c), 7(a), 7(d), 7(f), 7(l), 5(a) (Forestry)                  (3) Building must not be erected on land to which this clause applies unless it complies with the setback distances shown in the table</p>	<p>All structures associated with the development would be set back a nominal 30 metres as required.</p>
<p><u>Clause 31 – Development adjoining waterbodies</u>                  (1) Objectives – to protect and enhance the scenic quality, water quality, aquatic ecosystems, biodiversity and wildlife habitats and corridors, to provide adequate public access to waterways and to minimise the impact on development from known biting midge and mosquito breeding areas                  (2) This clause applies to land that adjoins the mean high-water mark (or the bank where there is no mean high-water mark) of a waterbody                  (3) Consent must not be granted to development on land to which this clause applies, within such distance as is determined by the consent authority of the mean high-water mark....., unless it is satisfied that:                  (a) the development will not have a significant adverse impact on scenic or water quality, marine ecosystems, or the biodiversity of the riverine or estuarine area or its function as a wildlife corridor or habitat                  (b) adequate arrangements for public access to and use of foreshore areas have been made                  (c) the development is compatible with any coastal, estuary or river plan of</p>	<p>The proposed remediation is consistent with the objectives of this clause.</p> <p>Part of the seawater intake pipeline is located within and adjacent to Dreamtime Beach, Kingscliff</p> <p>The pipeline and pumphouse would be located underground and would not impact upon these qualities</p> <p>During construction and maintenance, public access would be temporarily restricted, however, given the short term nature of such activities, this is considered acceptable.</p> <p>The proposed development is consistent with the</p>

<p><i>management adopted by Council under the Local Government Act 1993</i></p>	<p>Tweed Estuary Management Plan</p>
<p><b><u>Clause 34 – Flooding</u></b>  <i>(1) Objectives - to minimise future potential flood damage by ensuring that only appropriate compatible development occurs on flood liable land and to minimise the adverse effect of flooding on the community.</i>  <i>(2) Where, in the consent authority’s opinion, land is likely to be subject to flooding, then it must not grant consent to development on that land unless it has considered:</i>  <i>(a) the extent and nature of the flooding hazard affecting the land, and</i>  <i>(b) whether or not the development would increase the risk or severity of flooding of other land in the vicinity, and</i>  <i>(c) whether the risk or severity of flooding affecting the development could be reasonably mitigated, and</i>  <i>(d) the impact of the development on emergency services, and</i>  <i>(e) the provisions of Tweed Development Control Plan No 5—Development of Flood Liable Land and any other relevant development control plan.</i></p>	<p>The Applicant undertook a flood impact assessment. The assessment considered the impact of the proposed development in isolation and with other development in the area.</p> <p>The Department is satisfied that the proposed development would not significantly impact upon the flooding pattern of the area.</p> <p>Refer to section 6.2 for further detail.</p>
<p><b><u>Clause 35 – Acid Sulfate Soils</u></b>  <i>(1) Objectives – to manage disturbance of ASS to minimise impacts on water quality, ecosystems, infrastructure and agricultural and urban activities</i>  <i>(3) A person must not, without development consent, carry out works on land shown as being Class 1, 2, 3, 4, or 5 land on the series of maps held in the office of the Council and marked “Acid Sulfate Soil Planning Map”, being the works specified for the class of land in the following table</i>  <i>(4) The consent authority must not grant consent to works specified in subclause 3 unless it has considered: (a) a preliminary soil assessment to ascertain the presence or absence of ASS within the area of proposed works, (b) any ASS Management Plan where ASS are determined to be present, (c) the likelihood of the development resulting in the oxidation of ASS and discharge of acid waters from the site</i></p>	<p>The proposed borrow pit would only be excavated to a depth approximately 30cm above the groundwater level thereby minimising any potential ASS impacts</p> <p>The proposed development is located adjacent to land identified as Class 1 ASS. Development consent is required for the proposal.</p> <p>A preliminary soil assessment has determined the presence of potential ASS. The development has the potential to result in the oxidation of ASS and as such, all stockpiling of excavated materials will be undertaken in a bunded, hardstand area with the soil doused with lime to prevent acid generation.</p>