State Planning Commission

ASSESSMENT REPORT

DEEP WATER PORT FACILITY – SMITH BAY, KANGAROO ISLAND

Kangaroo Island Plantation Timbers

July 2021

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1 Executive Summary

A deep-water port facility at Smith Bay on the northern coast of Kangaroo Island has been proposed by Kangaroo Island Plantation Timbers (KIPT). The proposal was declared a Major Development pursuant to section 46 of the now-repealed South Australian *Development Act 1993* and was subject to an Environmental Impact Statement (EIS) level of assessment.

The proposal was also declared a 'controlled action' under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In accordance with the Bilateral Agreement (Assessment) between the South Australian and Commonwealth governments, it was decided that a single assessment process was to be followed (i.e. the South Australian Major Development process) to minimise duplication.

KIPT is an ASX-listed company established in 2000 (adopting its current name in 2013) which owns approximately 14,200 hectares of land on the Island. Prior to the bushfires, KIPT envisaged an annual average harvest of 600,000 to 730,000 tonnes per annum for 13 years (first rotation) and a further 500,000 to 630,000 tonnes per annum, dependent upon the amount of replanting on land held by other landowners, for the second planned rotation. The project had a projected life span of at least 25 years.

At the outset, a number of general observations can be made regarding the proposal. These include the following:

- The planting of large-scale timber plantations on the Island from the early to mid-1990s with no clear pathway for export is a matter of historical record.

- Without an alternative Island-based facility for timber processing, and if it is accepted that the timber resource should be utilised through export, then a suitable port is required.

- Undoubtedly, the transport of timber (regardless of the location of a port) will have significant direct impact on the character of the Island.

- If it is accepted that the timber should be utilised in the fashion proposed, then the question is whether Smith Bay is a suitable location for a port.

- Through the assessment process, the suitability of the Smith Bay site is under question, as is whether the transportation of timber can be supported and, on that basis, whether the current proposal should be approved.

- The projected employment and economic benefits are based on the harvesting and haulage of timber (which are not site dependant) as well as the construction and operation of the port at Smith Bay.

Impact assessment has been based upon timber production and associated employment figures, as presented in the EIS, on the assumption that these will represent the maximum achievable amount under preferable circumstances. This was done to enable consideration of the full impact of the facility.

During December 2019 and January 2020, after the release of the EIS, significant bushfires affected large parts of Kangaroo Island. This included most of the plantations owned by KIPT, which advised that up to 90 per cent of its trees suffered significant damage. Whilst the nature of the proposal has

not changed as a result of the fires, it has resulted in the evolution of the scope and duration of the initial harvest of fire-damaged timber and the timing of any second rotation.

Ongoing analysis of the amount of salvageable timber will further refine those headline figures. Such refinements will result in some change to overall impacts, in terms of projected benefits as well as risk and costs.

The proposal was intended to be designed to accommodate potential future third-party users of the port. The design presented for assessment is for the sole use of exporting timber product. Any other use is likely to require modification, and that matter is not considered in this assessment. Any future alternative use of the facility will require separate further assessment and development approval.

In terms of the proposal under assessment, the design of the port facility has evolved over time. This evolution is in response to community and agency feedback, resulting in a final design that includes: (1) an open-piled jetty up to 650m long, connected to a floating barge, with associated on-land facilities; and (2) timber stockpile and storage facilities for logs and woodchips, ship-loading and material-handling infrastructure, including conveyors, laydown areas, internal roads, administration buildings and security fencing. Should full harvest be achieved, it is expected that this will result in 10 to 20 ship movements (Panamax and Handymax) per year, with vessels berthed at the facility for 30 to 75 days per year.

Consultation and key milestones associated with this assessment process have included:

- Draft EIS (1,400 submissions received)
- First Addendum (100 submissions received)
- Response Document
- Initial advice from State Planning Commission to Minister
- Second Addendum (78 submissions received)
- Second Response Document
- Assessment Report (AR—this document)

The assessment process has been informed with advice from State Government agencies; the Australian Department of Agriculture, Water and the Environment[1] (DAWE); Kangaroo Island Council (Council); and public and key stakeholder submissions.

A review of forestry policy on Kangaroo Island and any other policy that may relate to future management of plantation timber is outside the scope of this assessment.

The key planning issues relate to:

- the appropriateness of Smith Bay for the proposed port activities;
- potential impact on environmental values, including marine species, in the coastal waters of Smith Bay during construction and operation;
- potential impact on adjacent aquaculture operations;
- potential biosecurity impact from international shipping;
- potential traffic impact, including the ability of the roads to support heavy vehicle traffic;
- financial responsibility for road upgrades and ongoing maintenance costs;
- potential impact on community facilities due to increased population; and
- potential economic impact; in particular, job creation and investment on Kangaroo Island.

[1] Formerly the Commonwealth Department of Environment and Energy

The proposed development has undergone a rigorous assessment process, with design amendments adopted and project assumptions challenged by submissions and feedback from the public and advice from the Council and State and Commonwealth agencies and departments over three years.

A major development assessment considers the merits of a proposal and the appropriate management or mitigation of complex impacts, either individually or together. The alternative is that identified impacts cannot be managed and that the development should be refused.

The assessment process has found that the proposed development at the Smith Bay site gives rise to a range of potential benefits, as well as risks and impacts. In terms of the latter, the most significant can be broadly split into three main areas:

(1) impact on the adjacent abalone facility (Yumbah Aquaculture), along with the neighbouring Molly's Run tourism facility;
(2) traffic and transport impact on the physical road network along with other road users and on fauna strike (in particular, the Kangaroo Island echidna, Rosenberg's goanna, macropods and cetaceans); and
(3) impact on the Island's character, overall dynamics and social fabric.

In relation to Yumbah Aquaculture, the analysis demonstrates that the majority of impact can be managed through the implementation of, and strict adherence to, a suite of Environmental Management Plans, strategies, Environmental Protection Policies and Codes of Practice, and an EPA licence. A strict governance arrangement will be required to ensure compliance and adherence to these plans and conditions.

In relation to the impact on Molly's Run, whilst the proposal is likely to have direct visual and noise implications, it is considered that these can be partially mitigated through landscaping and the sealing of North Coast Road. In overall terms, the visitor experience at this established business is likely to be diminished.

In relation to the traffic and transportation of the timber product from the plantations to the proposed facility, KIPT has worked with the Department for Infrastructure and Transport to determine an agreed route to the site. Preliminary road upgrades have been identified, including the capping and sealing of a section of North Coast Road. Notwithstanding this, further work is still required to develop a Road and Traffic Management Plan that outlines the required upgrades, ongoing maintenance, hours of haulage, speed limits and reporting of incidents. A Road Infrastructure Agreement is also required; and this Agreement will clarify the required upgrades, funding arrangements and timing of the upgrades.

Recent funding announcements by the Federal and State governments will also see road infrastructure investment on the Island.

In summary, based upon advice received from the Department for Infrastructure and Transport, it is concluded that timber can be transported in a safe and effective manner provided that necessary road upgrades are undertaken and an appropriate Road and Traffic Management Plan is implemented.

In terms of the Island's character, a development of this nature will change the social fabric of the Island. Kangaroo Island is regarded as one of the world's great nature-based destinations with native bushland, wildlife, adventure, exploration, and boutique food and wine. Although plantation forestry may be a sustainable and 'green' industry, this does not attract tourists to the island. The agreed transport route avoids, as best as possible, the majority of the tourist areas of the Island, however

interaction of the haulage trucks with tourist traffic will be unavoidable. Ongoing management measures will be required, including a broader commentary with incoming tourists as to the presence of haulage trucks on the Islands roads.

The economic impacts of the proposal have been quantified, and the potential economic impact on the adjacent aquaculture facility was provided by Yumbah Aquaculture in its submissions. However, the broader impact on the Island's economy, particularly in relation to the tourism industry, have not been fully explored. The Commission acknowledges this is difficult to quantify. Acknowledging the mitigation measures proposed, based on the current level of understanding, this issue is unlikely to be fully realised or understood until after any operation of the development, should it be approved.

The capacity to successfully manage and mitigate any impact needs to be carefully considered, with regard to: the character of the receiving environment (including the operations of Yumbah Aquaculture); the nature, duration and extent of the expected impacts (individually and in a cumulative sense); and the associated risk profiles, informed by the extent to which risks can be controlled and mitigated by the application of acceptable and proven management strategies.

A development of this kind and in this location requires expert understanding of the character of the receiving environment and the nature, duration and extent of impact. It also requires confidence in the capacity of KIPT to effectively deploy a strict set of controls, mitigation and monitoring measures capable of managing environmental impacts and maintaining them within acceptable limits. Advice and assurance has been sought from a number of agencies, which have confirmed that the proposal is capable of support subject to a range of requirements.

Having carefully considered these matters, along with the advice obtained, it is considered that the impacts and potential risks associated with the Smith Bay proposal can be managed through a strict suite of management plans, and licensing where required. On this basis, whilst finely balanced, it is concluded that the proposal should be granted provisional development authorisation, subject to conditions.

A summary of key issues and conclusions is presented at Table 1.

Should the Minister resolve to grant provisional development authorisation, a number of critical matters are recommended to be reserved for further assessment and formal sign-off, along with a detailed suite of conditions. These are outlined in Chapter 11.

An effective and responsive monitoring and compliance framework is also critical to ensuring that impacts are appropriately managed and that the interface with the conditions and licence requirements is well understood. This framework should include regular reporting by KIPT and an ongoing cross-agency governance arrangement (including responsible State agencies, the Commonwealth Government and the Council) to oversee compliance.

In addition to the available actions under the *Environment Protection Act 1993* pertaining to the enforcement of licence requirements, section 115(11) of the *Planning, Development and Infrastructure Act 2016* makes it an offence to undertake development contrary to a relevant development authorisation.

Table 1: Summary of key issues and conclusions

Key Issue	Summary	Conclusion
Location	Independent review commissioned to identify sites in the Island for a facility of this nature. Review concluded that there is no single, standout site on the Island but that in overall terms, Smith Bay ranked better than other potential locations and is an appropriate location for this port.	Smith Bay is considered to be an appropriate site for the proposed port development.
Marine Environment	KIPT undertook extensive monitoring informing EIS. Dredging component removed. Pile driving and ship movements will result in temporary localised areas of sedimentation and turbidity. Risk of fuel, oil, hydraulic fluids or chemical spills. Risk of polluted stormwater run-off into marine environment. Proposed management systems based on intercepting pollutants rather than treatment.	EPA is satisfied that risks can be managed. Fuel and chemical storage and handling will be managed via EPA licence. If approved, EPA requires the use of an oil water separator. Considered that impacts can be managed through implementation of and adherence to: • Construction and Operational Environmental Management Plans • Waste Minimisation and Management Plan • Stormwater Management Plan
Biosecurity	Risk of introduced marine pests. Commonwealth primarily responsible for managing biosecurity issues and risk. Smith Bay lies within the 'same risk' area (declared under the Biosecurity Act) as Port Adelaide, where there are known marine pests. KIPT committed to not taking ballast water from Port Adelaide.	Ballast water exchange and uptake from Port Adelaide is not supported - recommended Condition related to Ballast Water. Considered that impacts can be managed through implementation and adherence to: • Construction and Operational Environmental Management Plans • Marine Pest Management Plan • Biosecurity Management Plan
Fauna (marine)	Risk of construction and shipping movement impact on whales and dolphins that frequent Smith Bay—in particular, noise and vessel strike. Smith Bay is not a breeding or nursing area; however, impact may still occur. During construction, management measures include pre-start up observations, soft start, shut down zones, marine fauna observers and no night piling. Species are mobile and temporary behavioral change (avoidance) is likely during construction and operation.	Impacts on marine fauna expected to be minimal and temporary in nature. Risk of vessel strike considered low. Considered that impacts can be managed through implementation and adherence to: • Construction and Operational Environmental Management Plans • Fauna Management and Monitoring Plan • Southern Right Whale Management and Monitoring Plan
Fauna (terrestrial)	Significant risk of strike from haulage trucks along transport route, especially for the KI echidna (nationally listed), Rosenberg's goanna (locally listed) and macropods.	Volume of haulage trucks poses significant risk to terrestrial fauna if management strategies not implemented.

	Issue has been exacerbated by the recent fires. With many species numbers now lower than before, any impact or mortality is significant to species recovery. Proposal haulage proposed 12hrs per day (6am – 6pm M-F) resulting in truck movements along the route every 3.5-6 minutes. Many species, including the KI echidna, are more active between dusk and dawn, posing heightened risk of strike at these times. Roadkill numbers presented in the EIS are likely to be underestimated due to the number of unreported incidents.	Haulage pre-dawn and post-dusk not supported. Considered that impacts can be managed through implementation and adherence to: • Traffic control measures (including reduced speed limits, curfews and signage) • Driver education and code of conduct • Vehicle Strike Monitoring Strategy • Kangaroo Island Echidna Management, Monitoring and Offset Plan • Fauna Management and Monitoring Plan If approved, DAWE requires a KI Echidna offset.
Traffic and Transport	Proposal haulage proposed 12hr per day (6am – 6pm M-F) resulting in truck movements along the route every 3.5-6 minutes. Significant impacts on the road network: upgrades will be required regardless of vehicle used (with additional road upgrades and permitting required for HPVs). Funding of required upgrades and ongoing maintenance. Significant impacts on other road users and residences adjacent the route (fauna impacts noted above).	Use of a defined haulage route to the site, avoiding key tourist areas, is supported by DIT (utilising Playford Highway and a portion of North Coast Road). Sealing a section of North Coast Road required. Considered that impacts can be managed through implementation and adherence to: • Road and Traffic Management Plan • Road Infrastructure Agreement In the absence of other dedicated funding, KIPT, as the main beneficiary of road upgrades, should be responsible to fund the necessary upgrades to the road network and be accountable for any damage to transport assets caused by the development. Use of HPVs will require permitting (*Heavy Vehicle National Law (South Australia) Act 2013).*
Economy	Construction and operation of the port (mostly through harvesting operations) will result in additional direct and indirect employment on the Island, in SA and at a National level. Potential loss of jobs and income for Yumbah Aquaculture, nearby Molly's Run B&B and tourism operators based in the North Coast. Tourism is a major industry on the Island and supports many jobs. Potential impact on Islands 'clean and green' marketing image may impact upon tourism. Number in EIS based upon two full rotations. Final numbers to be determined and may not be realised.	The 'natural environment' marketing image is a mainstay for Kangaroo Island. This proposal will likely impact upon this image. Tourism on the Island is concentrated in the south-western, southern and south-eastern parts of the island, and as the dedicated transport route avoids this area, impacts are expected to be minimised, but will remain. Whilst the full Island economy has not been explored in the EIS, overall, it is expected that the realisation of the proposal will likely have a positive impact on the Kangaroo Island economy, through the creation of jobs.

		Ongoing viability of the timber industry on the Island is outside the scope of the planning system and assessment of the proposal.
Yumbah Aquaculture	Yumbah's intake pipes located within 400m of the proposed wharf and grow-out tanks are approx. 100m of woodchip storage areas. Potential impact on Yumbah: changes in water quality within Smith Bay; introduction of marine pests and diseases; suspended sediments being drawn onto the intake pipes; dust, noise, light and vibration; oil spills. Cumulative impacts of concern. Potential impact on Yumbah 'clean and green' marketing image. KIPT undertook testing on testing on wild greenlip abalone to determine potential impacts from dust, turbidity and suspended sediments. EIS outlined a range of mitigation measures. EPA advised that General Environmental Duty (GED) for daytime noise had not been met.	It is noted that GED relates to human health and overall is not considered a threshold issue as Yumbah is not utilised for Rural Living purposes. The change in design has reduced sedimentation risk to Yumbah. Sealing of North Coast Road will reduce dust deposition on the shade cloth of the grow-out tanks (from traffic movements). Potential impact of woodchip dust accumulation remains; however, this can be managed through EPA licence requirements. EPA advised that the proposed mitigation measures outlined in the EIS and Response Document are acceptable. Along with individual impacts, there remains a need for vigilance in relation to the management and minimisation of cumulative impacts. Overall, it is considered that with proper management impacts can be properly managed through adherence to: • Construction and Operational Environmental Management Plans • Air Quality and Dust Management Plan Noise and Vibration Management Plan • Marine Pest Management Plan • Biosecurity Management Plan • Vegetation screening and landscaping EPA licence will be required for operation of the port.
Social & Community	Proposal is likely to lead to an increase in the Island's population, which will result in a change in demand for various services, infrastructure and accommodation needs on the Island. Increase in population may also result in an increase in skills, experience and a younger population to the Island may lead to greater participation in sporting and volunteer activities, which helps define the Island. Proposal will change social fabric and feel of the Island. There is no consensus on the Island (from residents and businesses) regarding the proposal.	The social fabric and feel of the Island is intangible and unique. If the project reaches its full potential (i.e. 2+ rotations) this impact will be long-lasting. Overall, whilst difficult to quantify, and being finely balanced, this change is considered acceptable.

2 Introduction

The proposal for a deep-water port and ancillary infrastructure was declared via notice in the *Gazette* dated 23 February 2017 to be a Major Development by the then Minister for Planning, pursuant to section 46 of the South Australian *Development Act 1993.*

The site is located on the northern coast of Kangaroo Island approximately 20km west of Kingscote and is accessed from North Coast Road via a private road (Freeoak Road). It comprises two privately owned (freehold) parcels of land with four parcels of Crown Land on Smith Bay, along with the marine waters adjoining or in the vicinity of the parcels extending into Smith Bay (as outlined in the Major Development declaration notice).

The proposed development lies within the boundaries of two planning areas. The onshore elements of the proposal are located within the Conservation Zone and the offshore elements are within the Coastal Waters and Offshore Islands Zone of the Planning and Design Code.

The location was chosen following a multi-site analysis which informed the view of the proponent that the site's proximity to timber plantations, access to deep water close to the shore, flat topography (for storage of materials) and previous use of part of the land for commercial operations (aquaculture) made it the most suitable location.

The then Development Assessment Commission (DAC) determined that the proposal should be assessed via an Environmental Impact Statement (EIS) process. The EIS was required to outline and assess the potential impacts and risks and the required management and mitigation measures associated with both the construction and operational phases of the proposal.

In response to feedback received during the public and agency consultation period on the initial EIS during March to May 2019 the proponent proposed amendments to the in-water components of the proposal. The declaration was amended via *Gazette* on 3 October 2019, and Guidelines endorsed by the State Planning Commission (taking over the role of DAC) on 24 October 2019 to reflect the changed nature of the proposed jetty design.

An updated EIS is the form of a 1st Addendum was subsequently prepared by the proponent and released on consultation from 7 November 2019 to 20 December 2019 and proposed:

- replacing the 250m solid causeway with an open fully piled jetty structure; and
- extending the open fully piled jetty out up to the 14m depth contour (estimated at 640m from the coast, an additional 220-250m further seaward than initially proposed).

Further updates to the proposal were provided by the applicant in response to the request for further information (the 2nd Addendum), including:

- specification of General Access Vehicle routes for the first five years of salvage harvest;
- proposed reduction in haulage hours to Monday to Friday from 6am to 6pm, with the option of 6am to 12noon haulage on Saturdays as required;
- commitment to fund upgrades and maintenance of all plantation feeder roads;
- a draft Biosecurity Management Plan, and draft Marine Pest and Disease Management Plans for both construction and operation

Along with the commercial value of existing salvageable timber, KIPT has indicated their commitment to re-establish timber plantings on the island, for which they have existing use rights. Currently, there is no facility available on the island to enable the export of timber. KIPT's ambition is to export timber from the island to Asia (principally Japan and China) and to make the facility available to other users

and for other cargoes and complementary uses (subject to separate decision making processes outside the scope of this assessment).

The total capital expenditure for the proposal is approximately $41.2 million over 3 years.

The construction is expected to take 12 to 15 months and generate 15 FTE direct and 6 FTE indirect jobs on the island. Once operational 163 FTE direct and 71 indirect local ongoing jobs will be created with an estimated additional 20 FTE ongoing jobs at the state level and 14 FTE ongoing jobs at the national level.

The expected annual average contribution to the island's Gross Regional Product (GRP) over the first 5 complete years of operation is expected to be $41.7 million ($34.9 million direct and $6.8 million indirect), representing an increase in GRP of approximately 16 percent and an expected increase in Gross State Product (GSP) of $7.2 million.

If approved, the facility at Smith Bay facility would become a harbor and port under the *Harbors and Navigation Act 1993* and be subject to relevant provisions and approvals required of that Act and Regulations.

3 The Assessment Process

3.1 Declarations and Guidelines

Following its declaration on 23 February 2017, KIPT lodged a formal Development Application in March 2017. The then Development Assessment Commission (DAC) determined that the assessment would be subject to an Environmental Impact Statement (EIS) process and in July 2017 issued Guidelines (issues to be considered) for the preparation of the EIS. The declaration and Guidelines were reviewed and updated in October 2019 to reflect changes to the proposal.

3.2 Consultation on the EIS

Consultation on the EIS lodged by KIPT has occurred on three occasions as the proposal has evolved and following the provision of further required information being provided.

Consultation undertaken has included:

1. 28 March 2019 – 28 May 2019
2. 7 November 2019 – 20 December 2019 (The 1st Addendum)
3. 14 January 2021 – 12 February 2021 (The 2nd Addendum).

Details of these consultation processes are included at Appendix 1.

3.3 The Relevant Authority

Regulation 11(3) of the *Planning, Development and Infrastructure (Transitional Provisions) Variation Regulations 2017* has the effect of making the Minister for Planning and Local Government the decision-maker (rather than the Governor) for major development applications declared under the *Development Act 1993* where the Planning and Design Code has commenced prior to a decision being

made. Consequently, the final decision on this proposal will be made by the Minister for Planning and Local Government (the Minister).

When making a decision, the Minister must have regard to the EIS (and the Addendums to the EIS), public, agency and Council submissions, the Response Document, relevant planning policies of the Code, the Planning Strategy, the *Environment Protection Act 1993* and any other matters that the Minister considers relevant.

3.4 *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*

Prior to declaration, KIPT referred the proposal to the Commonwealth Minister for the Environment under the *Environment Protection and Biodiversity Act 1999* (EPBC Act) [EPBC Reference Number 2016/7814]. The delegate of the Commonwealth Minister for the Environment decided on 14 December 2016 that the 'proposed action' (the proposal) is a 'controlled action' that requires assessment and a decision under the EPBC Act. This was due to the potential impact on 'listed threatened species and communities' (EPBC Act sections 18 and 18A), listed migratory species (EPBC Act sections 20 and 20A) and Commonwealth marine areas (EPBC Act sections 23 and 24A) as follows:

- The proposal is likely to have a significant impact on two listed threatened species in the EPBC Act: the endangered and migratory Southern right whale (*Eubalaena australis*) and the Kangaroo Island echidna (*Tachyglossus aculeatus multiaculeatus*)
- The proposal may have a significant impact on two EPBC listed threatened species: the vulnerable Hooded plover (eastern) (*Thinornis rubicollis rubicollis)* and the Southern brown bandicoot (eastern) (*Isoodon obesulus obesulus*).

Following refinement to the proposal after the initial period of public consultation (the 1st Addendum), the proponent notified the Commonwealth Minister for the Environment of the changes to the marine structure. After considering the proposed design change, the Minister concluded that:

- there was no significant change to the risk profile of the development
- the 'character' of the development, as a timber export facility incorporating storage, remained unchanged
- the development would not trigger any additional Matters of National Environmental Significance (MNES).

In response to the request for further information (the 2nd Addendum) the Commonwealth Minister concluded that there remained risks associated with the proposal in regards to fauna strike and that management plans, including vehicle strike monitoring will be crucial to verify the effectiveness of the proposed offset measures.

In accordance with the Bilateral Agreement (Assessment) between the South Australian and Commonwealth governments, a single assessment process was followed (i.e. the South Australian Major Development process) to minimise duplication. As such, the potential impacts and mitigation measures (including offsets) for the above-listed species are assessed in this Assessment Report (AR) in consultation with the Commonwealth Department of Agriculture, Water and the Environment[2].

Once completed, the South Australian Government provides the AR and any decision to the Commonwealth Minister for the Environment who will use it to decide whether or not to approve the proposed action under the EPBC Act. It should be noted that any decision would be specific to the listed species.

[2] Formerly the Commonwealth Department of Environment and Energy

3.5 The Assessment Report

This Assessment Report (AR) assesses the environmental, social and economic impacts of the proposal by KIPT.

The AR takes into consideration the requirements established under the *Development Act 1993*, including an assessment of the proposal as presented in the EIS and subsequent Addendums, community, Council and agency comments, and the Response Documents.

The EIS, Addendums, submissions and the Response Documents are available at https://plan.sa.gov.au/state_snapshot/development_activity/major_projects

The AR does not include an assessment of any elements of the proposal against the provisions of the Building Rules under the *Development Act 1993*. Further assessment of the elements of the proposed development against these rules will be required should an approval be issued.

The Response Document, along with the EIS and Addendums, forms part of the finalised proposal. This is the case also for the purposes of the EPBC Act. The Commonwealth Government has been fully involved during the assessment process as required by the Bilateral Agreement. Commonwealth requirements have been included in this AR.

4 Proposal

4.1 Overview of the proposed development

The proposed development has evolved over time but remains, in summary, the construction and operation of a deep-water wharf facility and associated on-land facilities to export timber products (logs and woodchips) from Kangaroo Island.

The original proposal (as per the initial EIS) was for a solid rock armoured causeway extending 250m into Smith Bay with an attached suspended deck jetty for 170m connecting to a floating berth pontoon via a link span bridge. This proposal also included dredging of approximately 100,000m^3, which would be used to form the rock causeway, following the settling of dredge within on-land settling ponds at the site (refer Figure 1).

Additional on-land components of the proposed facility included:

- two timber stockpile and storage facilities - one for logs (stockpiling up to 56,200 tonnes) and one for woodchips (stockpiling up to 80,000 tonnes)
- ship loading and materials handling infrastructure (including conveyors)
- laydown areas
- internal roadways and road transport access
- ancillary facilities including administration buildings, car parking and security fencing.

Following public and agency feedback, the in-water component of the proposal was changed to an open fully piled jetty extending up to 650m into Smith Bay to the natural 14m depth contour (as per the 1st Addendum to the EIS, Figure 2). These changes resulted in the removal of the causeway, the need to dredge and the associated on-land settling ponds. All other on-land components of the proposal remained the same as per the EIS.

In summary the proposed refined wharf structure would consist of:

- an open fully piled jetty (up to 650m long)
- link span bridge connected to a floating pontoon and tug mooring facilities
- restraining structures (piled steel structures that extend above the water level and are not connected to shore)
- mooring dolphins.

Following consultation on the 1st Addendum and in response to the request for further information the applicant provided additional details in the form of the 2nd Addendum. This provided additional detail confirming the nature and scope of the in water infrastructure, details of the proposed biosecurity management measures, along with the location of the public roads proposed to be utilised to transport the timber, and the framework under which this was proposed (refer 4.3 below).

It is estimated that in time the facility would export up to a maximum of 730,000 tonnes per annum of timber product[3] and that export vessels (mostly Panamax sized with some Handymax) would be berthed at the wharf between 30 and 75 days per year with 10 to 20 ship movements per year. The timber export vessels would formally enter and leave Australia at an international port before and after loading at Smith Bay.

The facility has been designed to accommodate third party users, noting these users would need to seek government approvals and agreements with the proponent prior to use. Suggested potential other uses include the export of containerised agricultural commodities and importing of farm machinery and products.

[3] Based upon figures presented in the EIS. These do not reflect any changes that will result from the 2019/2020 bushfires.

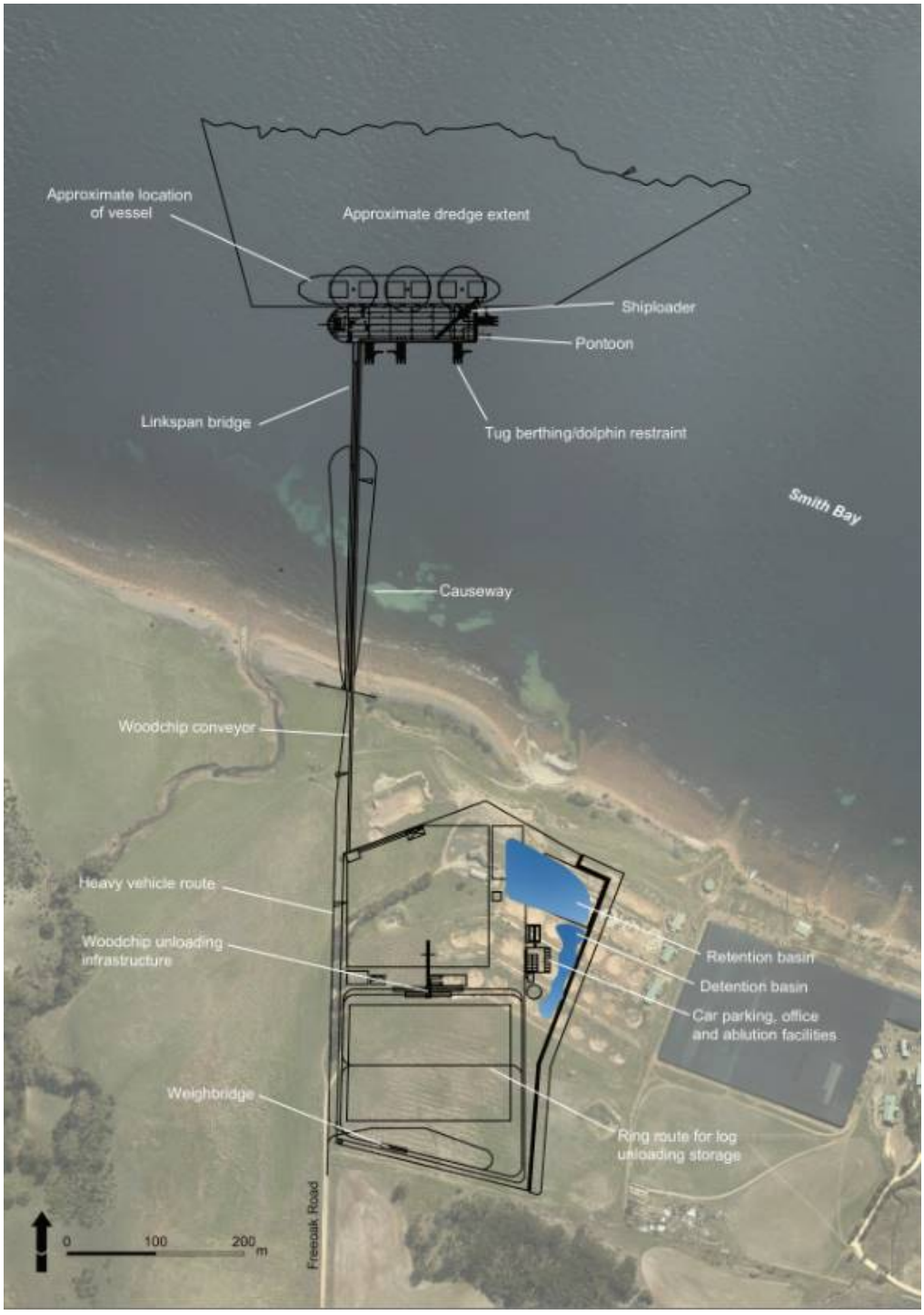


Figure 1: Proposal as presented in the EIS (January 2019) (EIS Figure 4-3)

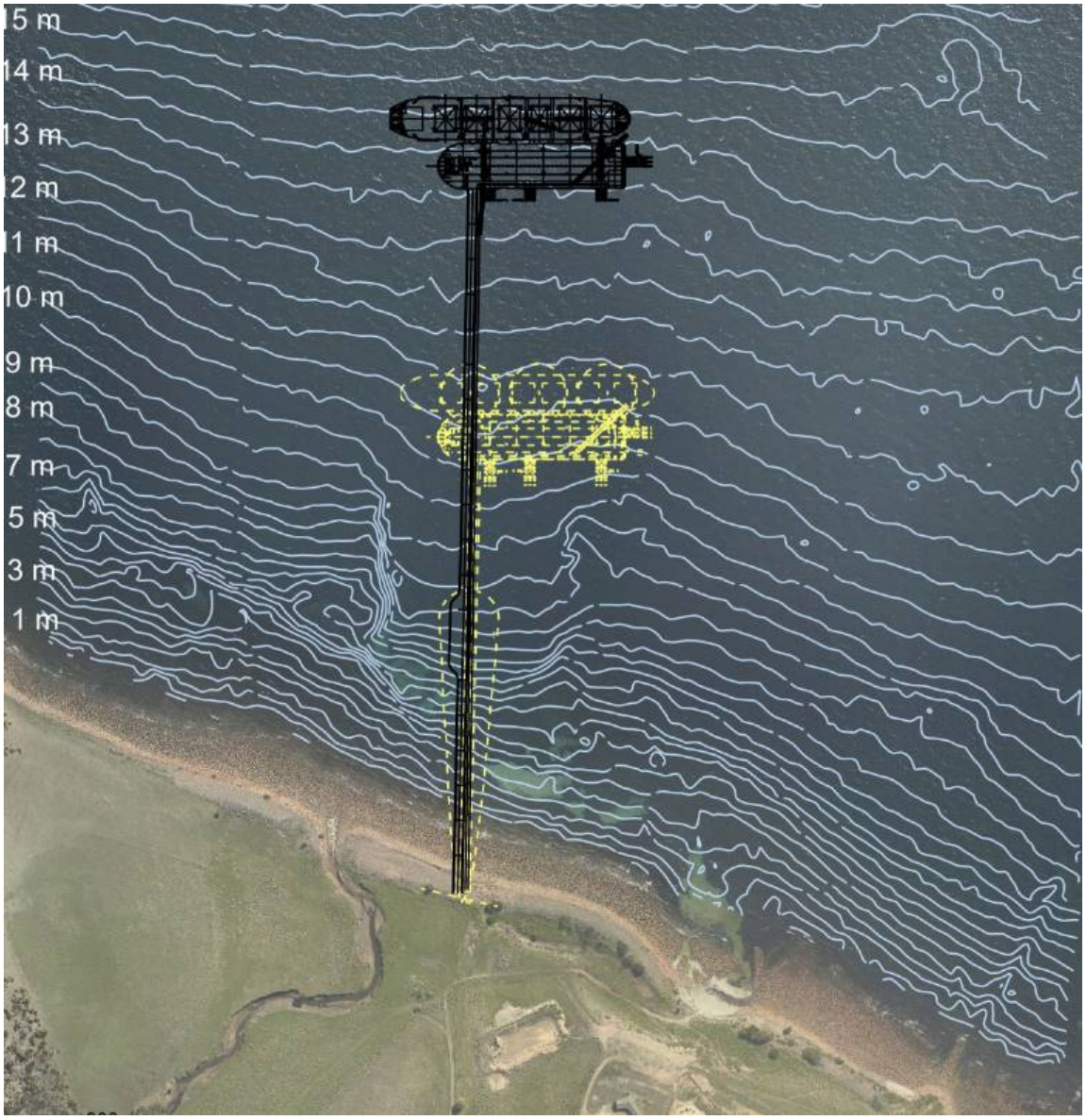


Figure 2: Comparison of the in-water structure proposed in the EIS (yellow) with that proposed in the Addendum to the EIS (October 2019) (black) (Addendum Figure 3-2)

If approved, the Smith Bay facility would become a harbor and port under the *Harbors and Navigation Act 1993* and be subject to relevant provisions of this Act and its regulations. The boundary of the harbor and port must be defined in consultation with all relevant stakeholders and to the satisfaction of the Minister for Infrastructure and Transport.

As the Smith Bay facility would be privately owned and operated, the designated port operator would be required to enter into a Port Operating Agreement with the Minister for Infrastructure and Transport.

Although the EIS identified that 'Smith Bay will not be a First Point of Entry under the Biosecurity Act[4]', subsequent discussions between the proponent and the Commonwealth Department of Agriculture, Water and the Environment[5] and the Department for Infrastructure, Regional Development and Cities,

[4] EIS Chapter 4, p81

[5] Formally the Department of Agriculture

have indicated that as international vessels will be utilising the port, regardless of where they clear customs and biosecurity measures in Australia, the requirements of the Commonwealth *Biosecurity Act 2015* would apply. As such, the port at Smith Bay, if approved, may be required to be registered as a First Point of Entry port. The proponent is pursuing this avenue separately. This does not affect the assessment of the proposal as any application to be a First Point of Entry port is subject to assessment by the relevant Commonwealth departments.

4.2 Site description

The land subject to this AR includes the gazetted land parcels, the road reserves and other land adjoining and servicing that land, and surrounding marine waters.

The subject site is comprised of 6 parcels of land – 2 x freehold allotments (owned by the proponent) and 4 x Crown titles.

Lot/Plan	Street / Road	Suburb/ Locality	Hundred	Title
Pieces 51 and 52	Freeoak Road	Wisanger	Menzies	CT 6127/273
Section 361	North Coast Road	Wisanger	Menzies	CR 5744/565
Section 362	North Coast Road	Wisanger	Menzies	CR 5744/565
Section 467	North Coast Road	Wisanger	Menzies	CR 5754/947
Section 471	North Coast Road	Wisanger	Menzies	CR 5744/574

The site is predominantly vacant with a wastewater dam and associated pipeline/pumps servicing a former aquaculture (abalone) operation and a single dwelling and associated water tanks and shedding, known as Smith Bay House, which is currently used for short-stay accommodation.

Sheep grazing and cropping occurs on the land to the west, south-west and south of the site and Yumbah Aquaculture is located directly to the east adjacent the site.

As the proposal includes Crown land under the care and control of the Minister for Environment and Water, if approved and prior to the commencement of any construction works, the proponent would need to enter into land tenure and access arrangements with that Minister subject to the *Crown Land Management Act 2009*.

The adjacent abalone facility, Yumbah Aquaculture, currently holds a non-exclusive licence to occupy coastal Crown land within the designated area (Licence to Occupy Number OL022375). This licence is for the purpose of a 'pump and pipeline' to facilitate the construction and maintenance of pumps and pipelines associated with Yumbah's operations. As this licence is 'non-exclusive' it does not exclude other parties from applying to use, or gaining access to, that land.

As the proposal involves the use of seabed areas, which are under the care and control of the Minister for Infrastructure and Transport, if approved and prior to the commencement of any construction works, KIPT would need to enter into a licence for construction purposes with that Minister subject to the *Harbors and Navigations Act 1993.* Following construction, KIPT would need to enter into a long-term arrangement over the relevant seabed areas on which the jetty is situated. Both these agreements are to be on terms and conditions acceptable to the Minister for Infrastructure and Transport.

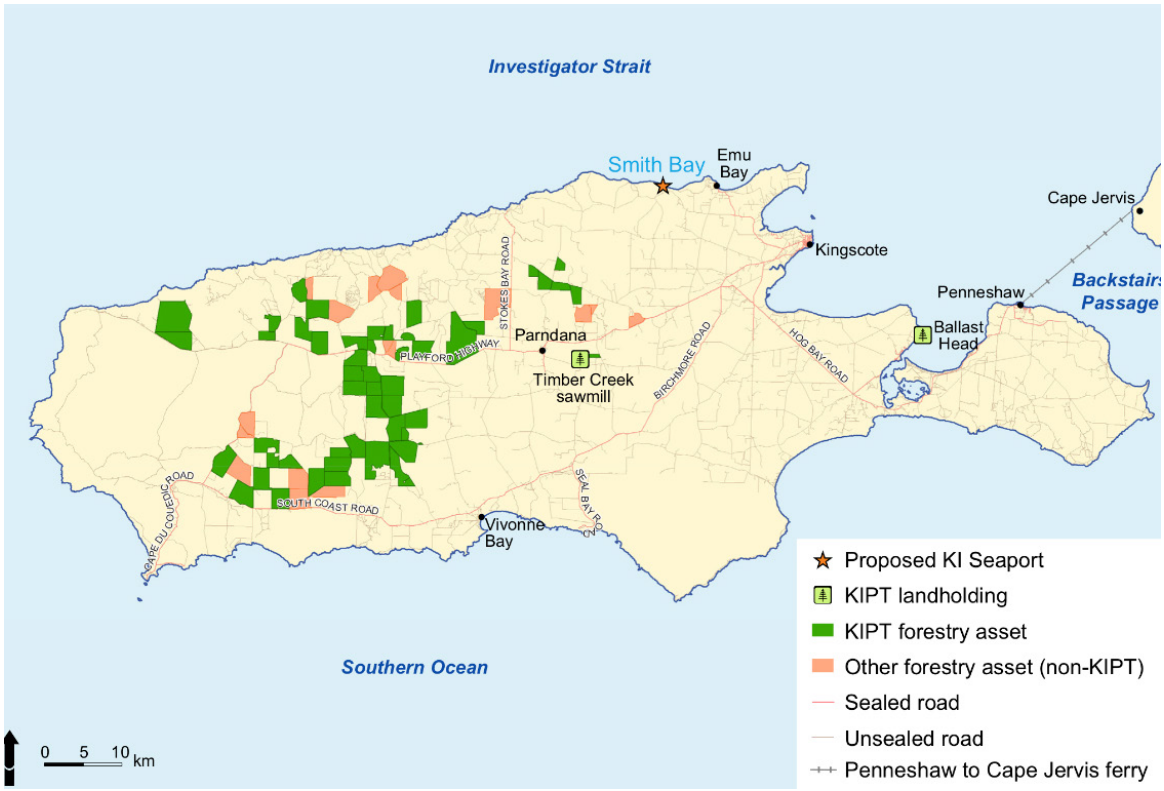


Figure 3: Proposed location of seaport (EIS Figure 1-3)

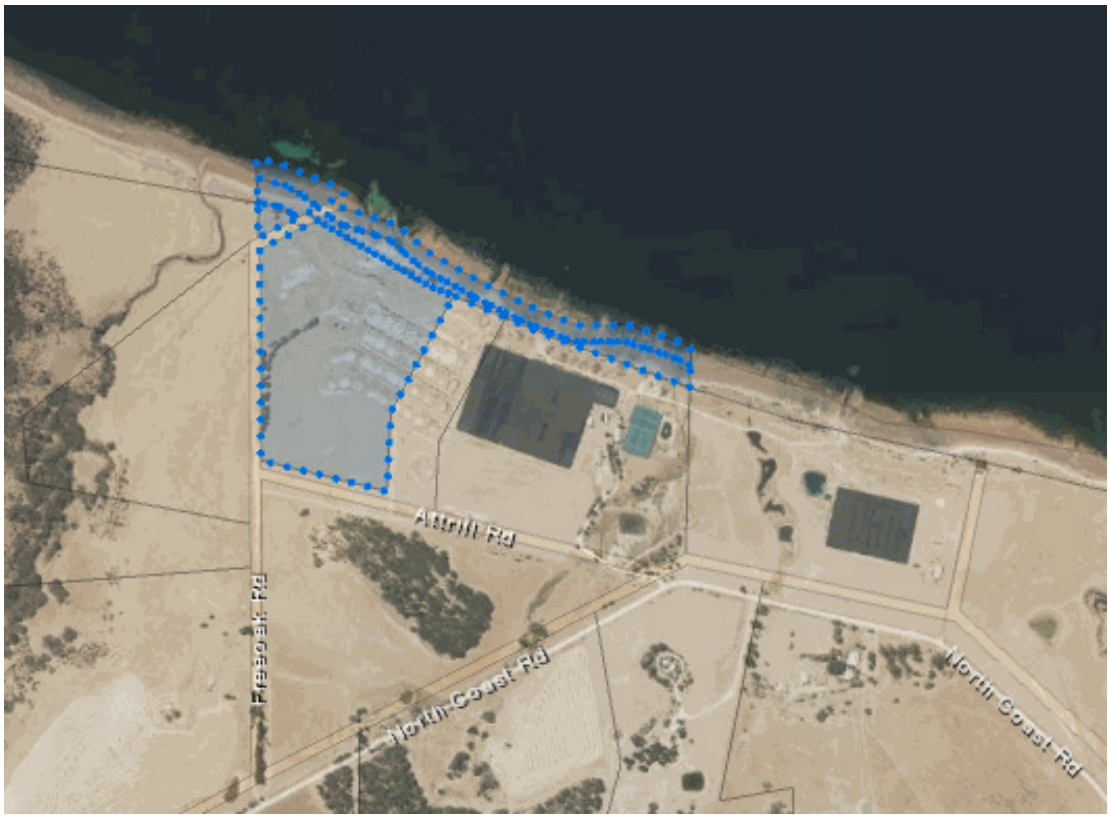


Figure 4: The site and relevant parcels of land (PLB Pro)

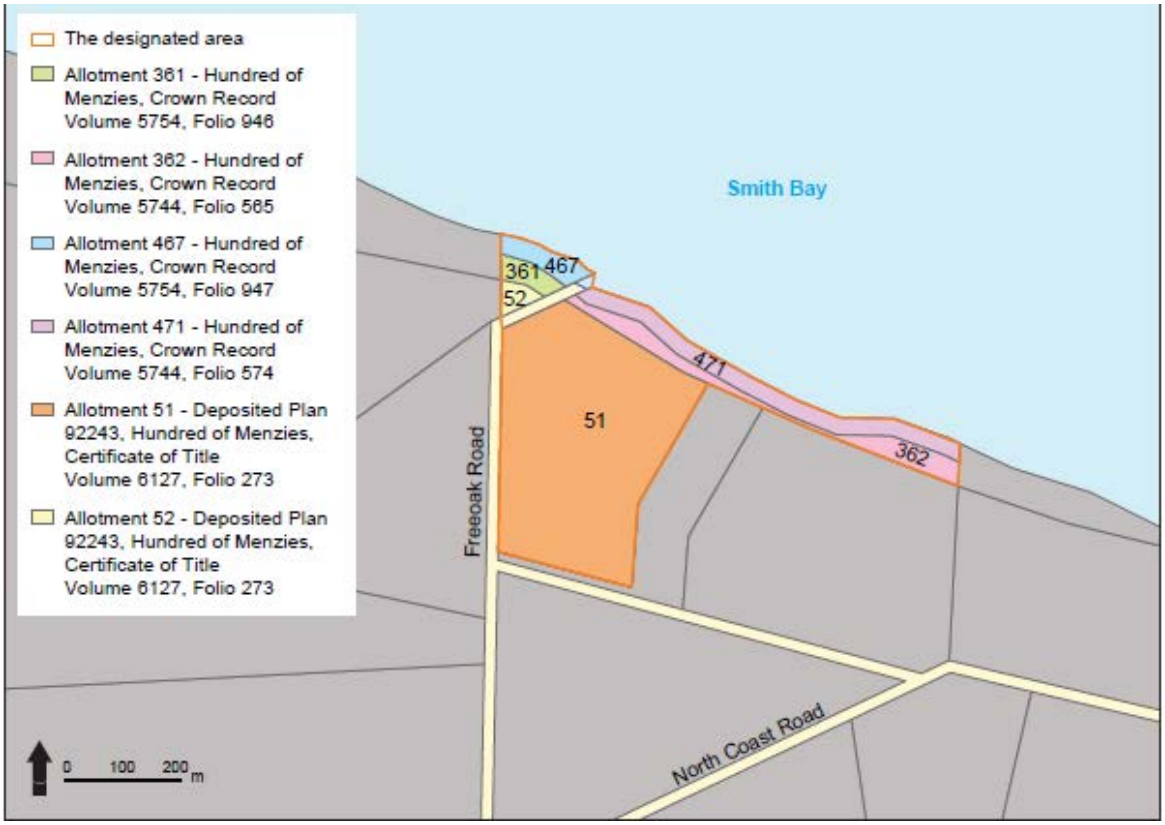


Figure 5: Relevant land titles (EIS Figure 6-1)

Figure 6: Existing land tenure (EIS Figure 6-3)

4.3 Proposed route to the site

The EIS initially outlined two potential routes. Option 1 consisted of Playford Highway (beginning at the junction of West End Highway) to the junction of Stokes Bay Road, Stokes Bay Road from Playford Highway to the junction of Bark Hut Road, Bark Hut Road from that junction to the junction of McBrides Road, McBrides Road, and North Coast Road from McBrides Road to Freeoak Road which constitutes the entry to the development site. Option 2 consisted of Playford Highway, Ropers Road, Gum Creek Road, Gap Road and North Coast Road. The proponent identified in the EIS that its preferred route was Option 1[6].

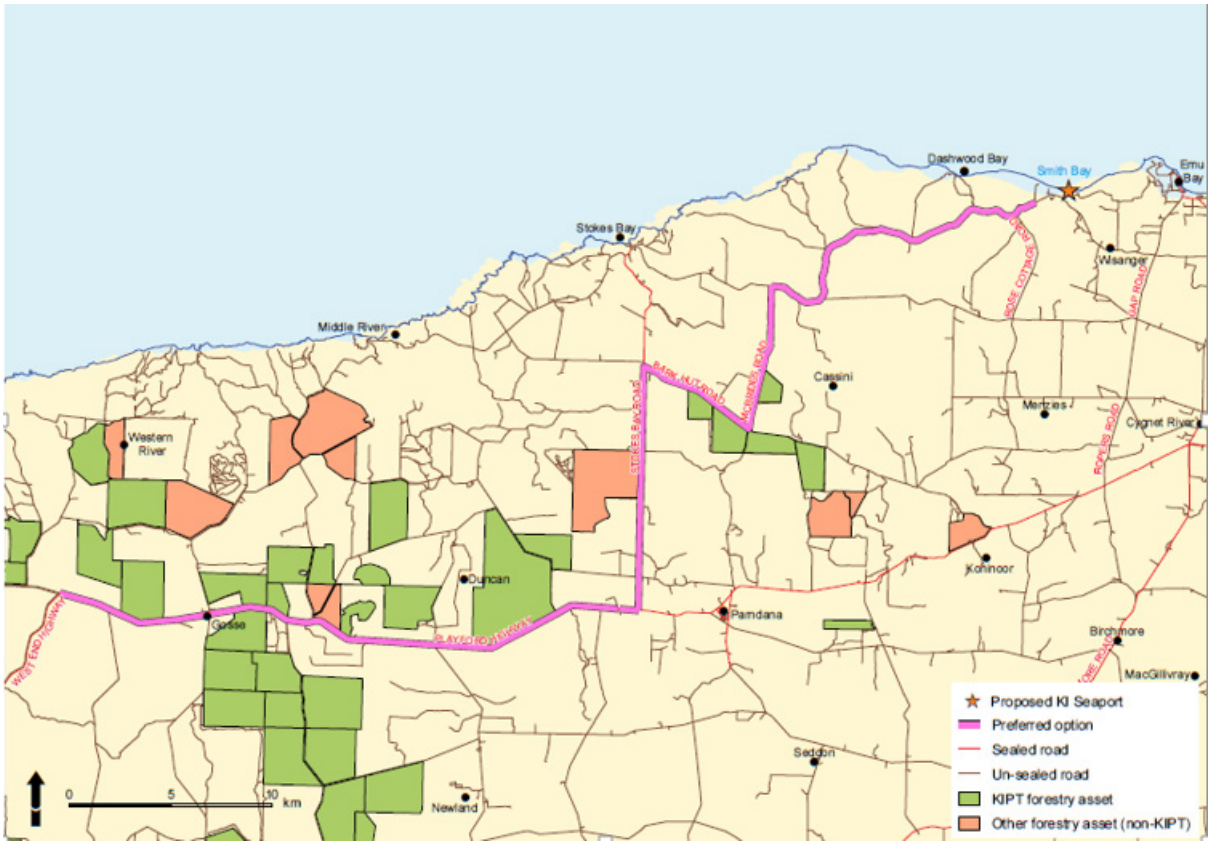


Figure 7: KIPT's preferred route (EIS Figure 21-8)

Through the amendment process the applicant is proposing five separate routes, plantation dependant, which will utilise West End Highway, South Coast Road, Birchmore Road, Playford Highway and North Coast Road.

[6] EIS Chapter 21, p480

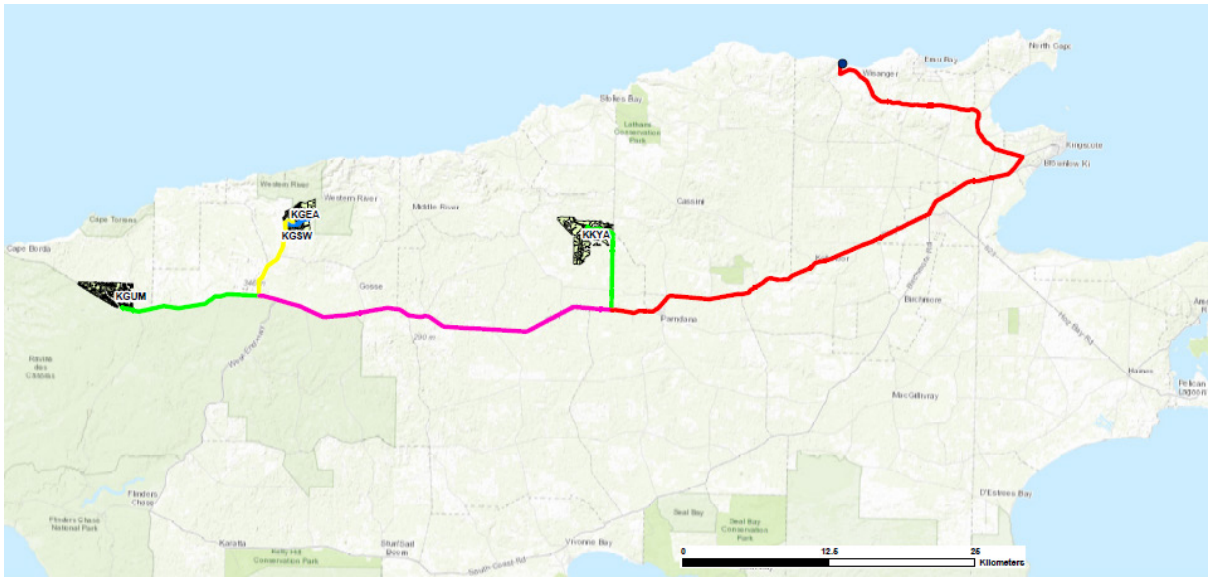


Figure 7a: route – 1st year fire salvage operation (Second Addendum Figure 2-1)

Figure 7b: route – 2nd year fire salvage operation (Second Addendum Figure 2-2)

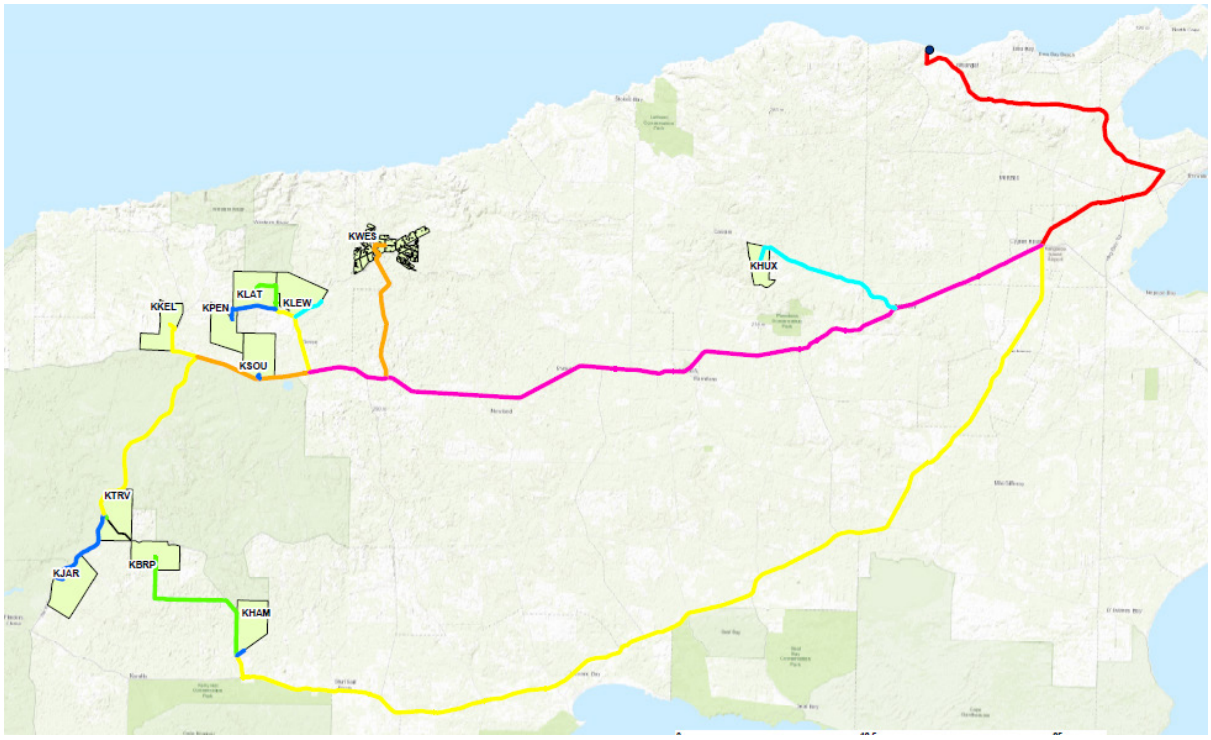


Figure 7c: route – 3rd year fire salvage operation (Second Addendum Figure 2-3)

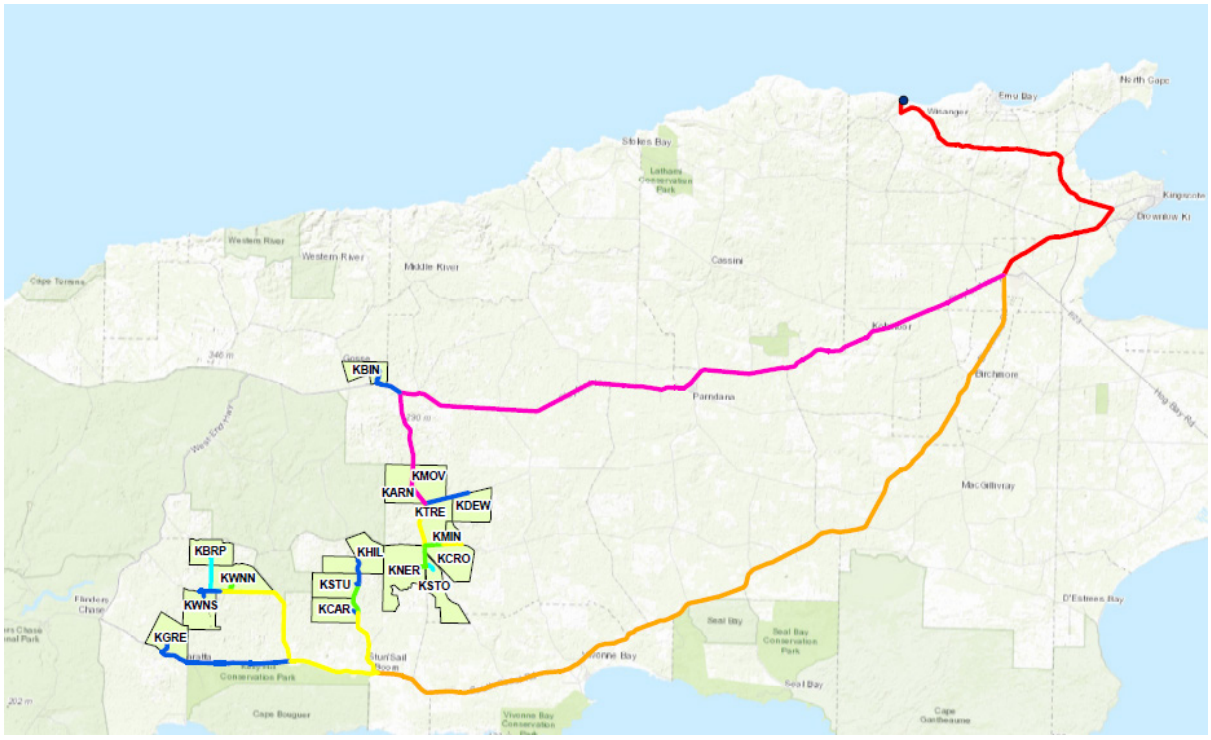


Figure 7d: route – 4th year fire salvage operation (Second Addendum Figure 2-4)

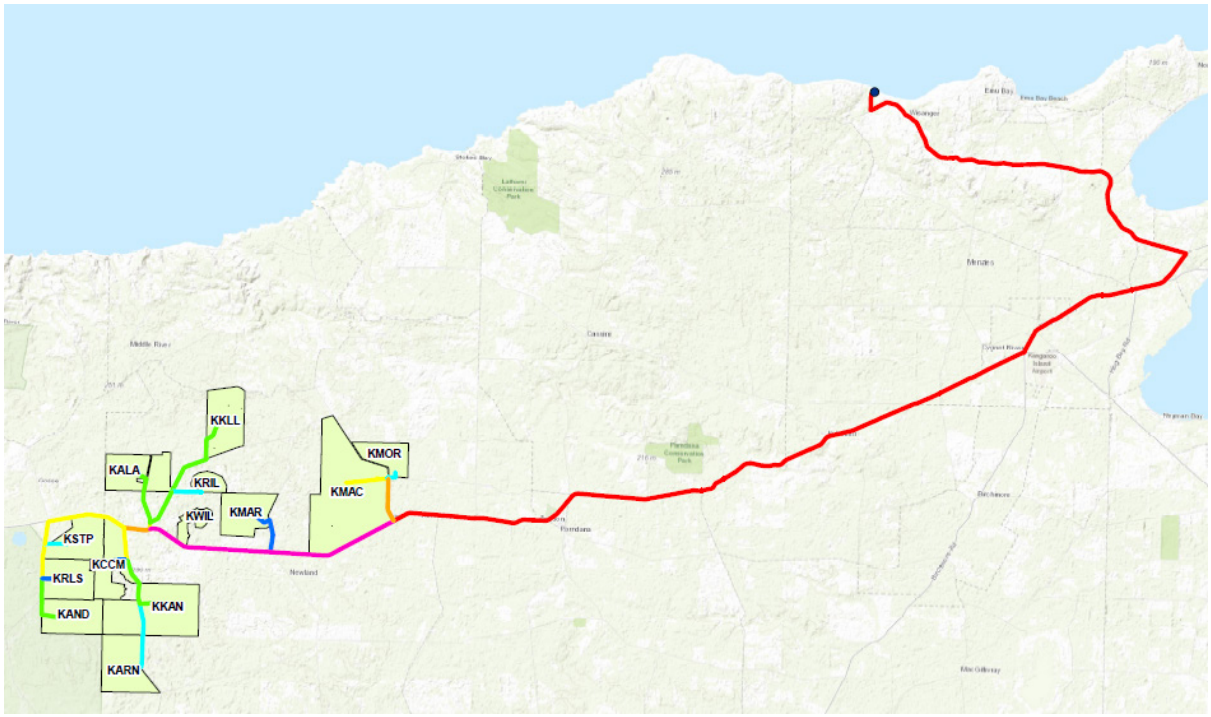


Figure 7e: route – 5th year fire operation (Second Addendum Figure 2-5)

5 Assessment of the Key Issues

The Response Document, along with the associated EIS and Addendums now forms the finalised EIS for the proposal. This is the case also for the purposes of the EPBC Act. The Commonwealth Government has been kept fully involved in the process and assessment of this development as is required by the Bilateral Agreement. Commonwealth requirements have been included in this Assessment Report.

5.1 Justification for the Proposal

Chapter 2 of the EIS relates to project justification.

The then Kangaroo Island Development Plan (consolidated 2015)[7] recognised the potential for a timber export wharf: 'Depending on the extent of the commercial development of blue gum forestry on the Island, a woodchip loading facility may be required by industry within the next 5 to 10 years to cater for the transport of harvested blue gum. Previous studies have identified Ballast Head as a potential site for a future deep sea port. This site, if appropriate, or similar sites could provide additional multi-use benefits to the Island.'

The EIS identified that there is a growing global demand for timber products, especially in Asia, and that there is a projected long-term supply shortfall for hardwood chips[8].

Previous government policy (Federal and state) promoted the development and expansion of large-scale commercial forestry plantations to create an internationally competitive and ecologically sustainable Australian wood production industry. In 1992 the National Forestry Policy Statement (a national agreement) was signed by the Commonwealth and all state and territory governments to protect native forests from logging and create jobs and economic activity in rural communities across the country. As a result, large-scale pine (softwood) and eucalyptus (hardwood) forests were planted on Kangaroo Island on an area approximating 20,000 hectares. Many of these plantations occurred on the western end of the island due to its natural advantages for timber production. Arguably the establishment of this industry justifies the need for a suitable port facility given that none existed.

The proponent provided a rationale and justification for the proposal as it identified that the majority of the island's timber resources are suitable only for international export (main markets being Asia, principally Japan and China) as South Australia lacks suitable timber processing facilities to add value to the raw product.

Kangaroo Island currently has no facility capable of handling and exporting timber in large volumes.

The EIS claimed that there is enough planation timber on Kangaroo Island to sustain a long-term harvesting regime with two rotations (providing export potential for 25 years) with an average harvest of 600,000 tonnes per annum for the first 13 years (first rotation) (noting a potential maximum annual harvest of up to 730,000 tonnes) followed by a further 500,000 tonnes per annum in the following 12 years (second rotation)[9] [10]. Following the bushfires of December 2019/January 2020 the proponent

[7] Note – The Planning and Design Code came into operation across South Australia on 19 March 2021. At the time of preparation of the EIS, the Planning and Design Code had not been enacted, as such the EIS considered the relevant provisions of the Kangaroo Island Development Plan.

[8] EIS Chapter 2, p19, 20

[9] EIS Chapter 2, p18 and 'The proponent's case for the development' (Executive Summary document, January 2019)

[10] Figures reflect pre December 2019 / January 2020 bushfires

advised that there remains a need for the proposal in the longer term to enable the removal of salvageable timber from the island. This will enable a second rotation, and any subsequent rotations, to occur and the continuation of forestry as a sustainable income source for the region.

Of the public submissions received, many of those supporting the proposal commented on the need to remove the mature plantation timber from the island. During the public consultation sessions held on the island, several members of the public with private timber landholdings discussed their desire to remove the plantation timber from their properties and return that land to agriculture. It is noted that in overall terms the land held by the proponent forms the largest element of the plantation timber on the island, with an area of approximately 14,200 hectares, and the proponent has committed to a second rotation planting.

The harvesting and export of timber is seasonal and the proposed port will not be used for timber export on a continuous basis. As such there will be an opportunity, subject to separate approvals, for the proposed facility to be used by third parties for other cargoes, including agricultural commodities and containerised farm inputs, which now occurs through the SeaLink ferry service at Penneshaw.

Noting the need to remove current available timber product and the planned second rotation, the inability to export mature timber product from the island would result in a material loss of value and income for the proponent and independent growers on the island. It would also result in ongoing maintenance issues for the existing forests, including weed, pest and bushfire management.

The AR concludes that the proposal is justified as it provides an opportunity for the plantation timber on Kangaroo Island to be removed and a second rotation to be commenced. Without a practical way to remove the timber from the island, the financial benefit of the timber product would otherwise remain 'locked up' with no economically viable means of taking the product to market.

The proposal will also provide an alternative location and opportunity (subject to additional approvals) for other parties to import and export cargo from the island.

5.2 Site Selection

Chapter 3 of the EIS and Appendix B relate to site selection and alternative locations.

The site subject to the major development proposal and assessment is as per the Major Development declaration notice as follows:

(a) Pieces 51 and 52 in Deposited Plan 92343, Hundred of Menzies, Certificate of Title Volume 6127, Folio 273
(b) Section 361, Hundred of Menzies, Crown Record Volume 5754, Folio 946
(c) Section 362, Hundred of Menzies, Crown Record Volume 5744, Folio 565
(d) Section 467, Hundred of Menzies, Crown Record Volume 5754, Folio 947
(e) Section 471, Hundred of Menzies, Crown Record Volume 5744, Folio 574
(f) Road reserves and other land adjoining and servicing (a)-(e) above
(g) Marine waters adjoining or in the vicinity of (a)-(e) above extending into Smith Bay.

The EIS described the analysis undertaken prior to the purchase of the site[11]. The proponent investigated 12 sites and preliminary analysis resulted in 4 feasible sites that could support a proposed deep-water port facility: Smith Bay, Cape Dutton, Point Morrison (Norma Cove) and Ballast Head.

[11] EIS Chapter 3

More detailed analysis was undertaken of these 4 sites in relation to material handling requirements (for both logs and woodchips), ability to accommodate other uses and cargo, and economic feasibility.

Analysis indicated that due to site topography, there would be higher construction costs for Cape Dutton, Point Morrison and Ballast Head. Smith Bay was identified as having the lowest ongoing operating cost.

The EIS identified Smith Bay as the best location based upon the following:

- can accommodate both woodchips and logs
- proximity to the plantations
- site topography
- relatively cleared land
- possible previous dredging
- not within a tourist area or Marine Park
- existing commercial operation use.

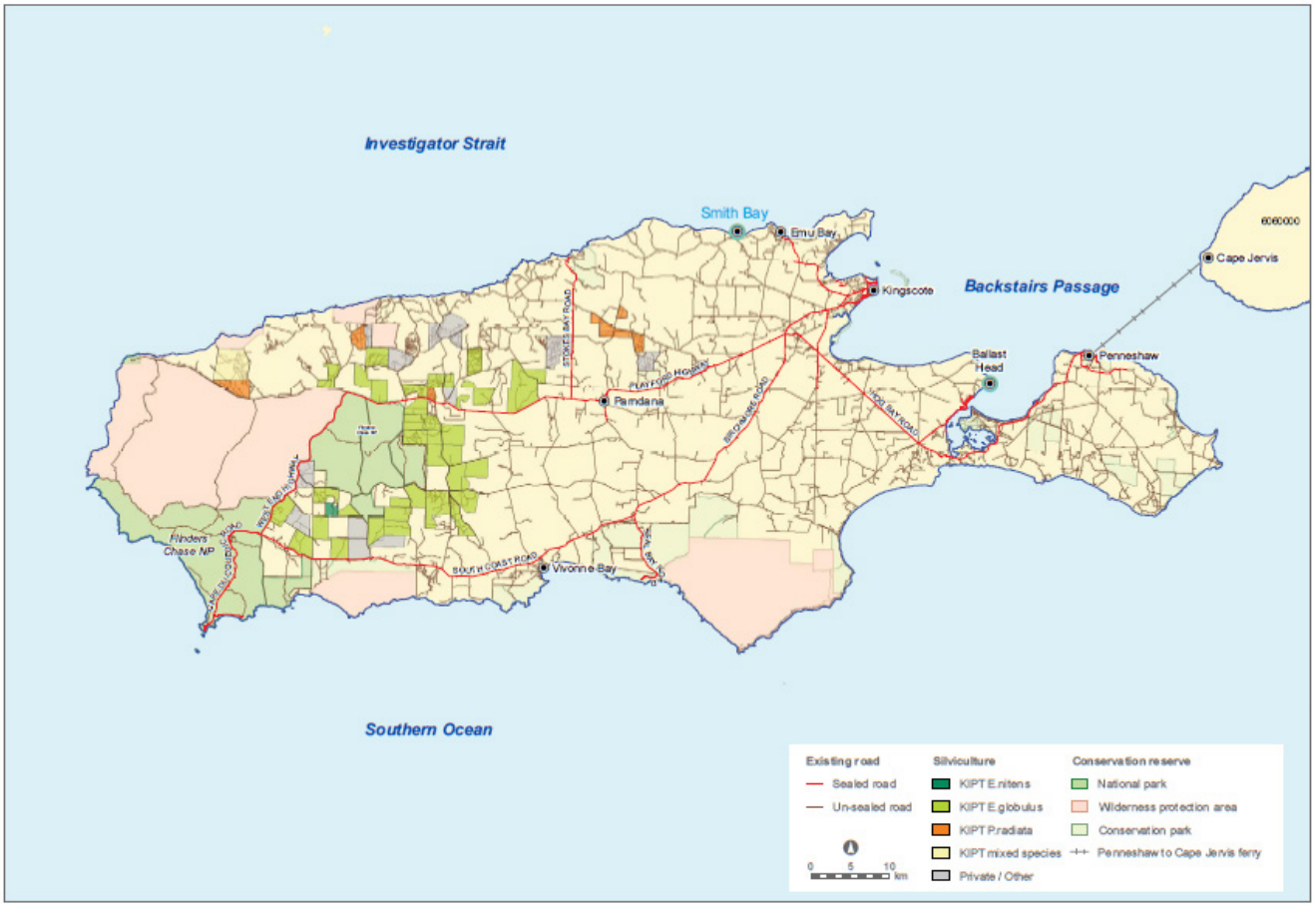


Figure 8: KIPT's plantations (EIS Figure 2-2)

5.2.1 Alternative locations

Guideline 6 required the proponent to consider alternative locations to enable a thorough assessment and a comparative basis of the suitability of the proposed location of Smith Bay. Alternative locations were required to be assessed in relation to the social, economic, environment and multi-user suitability.

The twelve (12) sites initially investigated by the proponent were: American River, Ballast Head, Cape Dutton, De Mole River, Kangaroo Head, Kingscote, Penneshaw, Point Morrison (Norma Cove), Smith Bay, Snug Cove, Vivonne Bay and Western River Cove.

As outlined previously, further analysis by the proponent narrowed this to 4 potential sites: Smith Bay, Cape Dutton, Point Morrison (Norma Cove) and Ballast Head, with Smith Bay being the final chosen location. The EIS acknowledged that the study was 'limited in its scope to assessing physical aspects associated with the various locations' and that 'Smith Bay was purchased in 2014 with the intent to develop a timber export facility on the site'[12].

Kangaroo Island Council is supportive of the need for a port facility, however not at Smith Bay. Its objection to Smith Bay is due to significant traffic concerns (costs of road upgrades and maintenance, volume of traffic and road user safety issues) and overall conflicts with planning provisions for the Coastal Conservation Zone. It is also not satisfied that other sites have been adequately considered by the proponent as no feasibility studies have been undertaken or presented.

The Council also raised concern at the co-location of a port facility next to Yumbah Aquaculture's existing operation, and is of the view that the two developments cannot coexist as the dissimilar land uses will cause ongoing conflict.

The Council suggested further investigation of possible locations west of Stokes Bay Road (i.e. west of the proposed Smith Bay location) as this would be closer to the plantations and would allow the proponent to put their own roads in place though some of the plantations, removing traffic from the central island zone (traffic considerations are addressed at section 5.6.2).

The area suggested by the Council is within the Habitat Protection Zone of the Southern Spencer Gulf Marine Park.

The proponent responded that all locations west of Stokes Bay are considered unsuitable as they would be located within the Marine Park, would be subject to high energy wave conditions and do not have access to three-phase power.

The Council, in its submission on the 1st Addendum, requested that further consideration be given by the State Government to establish whether the boundaries of the Southern Spencer Gulf Marine Park could be adjusted to accommodate a port facility which would not be within the Marine Park boundaries, thus enabling the facility to be located west of the proposed site of Smith Bay. This request is noted, and although a review of Marine Park boundaries and zoning may occur at some point, it is not currently proposed.

In its submission on the 2nd Addendum Council reiterated its objection to the location of Smith Bay.

Multiple public submissions raised concerns with the proposed location due to its proximity to the existing Yumbah Aquaculture operation, potential impacts on the marine environment of Smith Bay and traffic implications.

Several submissions suggested Ballast Head as a potential alternative location due to its past use as an export facility.

[12] EIS Appendix B

Ballast Head is also owned by the proponent. This was acquired when the proponent purchased New Forest's assets on Kangaroo Island.

Ballast Head has previously been used to ship gypsum from the island. This operation ceased in 1986 and the ship loading facility was removed from the site. Previous to the proponent's acquisition of New Forests' assets, New Forest had developed concept plans to build a woodchip export facility at Ballast Head.

The proponent advised it does not support Ballast Head as the preferred site due to:

- high capital and operating costs
- existing aquaculture operation (oyster) within the adjacent waters
- likely opposition from nearby residents.

Waters adjacent Ballast Head support several in-water aquaculture (oyster) ventures which would be directly affected by the construction and operation of the port. A submission from Ken Rowe (KI Shellfish) who has oyster leases there, confirms that the leases would be directly affected and the businesses would be unable to survive.

Any port development at Ballast Head would also visually impact residents at Brown Beach, Baudin Beach and Island Beach. Ballast Head is also close to the American River community where a higher level of tourism and holiday activities occurs.

In addition, vessels would need to traverse through a Habitat Protection Zone of the Encounter Marine Park to access the site.

A site visit of Ballast Head by Departmental staff identified that whilst there may be deeper water closer to shore, the current topography would not readily support large flat storage areas required by the proposal.

In regard to other potential sites suggested in the submissions, the proponent responded:

- D'Estrees Bay is an exposed location without suitable anchorage, and is within a Marine Park
- Port Marsden is in an exposed location, has shallow water, and is within a Marine Park
- Cape Dutton has soft, degraded limestone which is unsuitable as armour rock, and the high-energy wave environment is considered unsuitable
- Point Morrison was not for sale at the time of application and the proponent has no current ability to purchase it
- Vivonne Bay's south coast location is undesirable as it would require vessels to travel further and it has a high-energy wave environment.

No comparative analysis has been undertaken of alternative sites in the EIS to support Smith Bay as the preferred site.

To assist in the assessment and for the purposes of providing sector expertise additional to that available within government, Wavelength Consulting Pty Ltd was engaged separately by the former Department of Planning, Transport and Infrastructure to undertake an independent desktop review of potential port sites to determine whether Smith Bay was an appropriate site for a wharf and port facility and to test the viability of alternative sites identified in submissions, as required by the Guidelines.

Wavelength's review identified 20 potential port locations on the island, and after considering them against overall suitability criteria for a port of this nature, 9 locations were shortlisted for more detailed evidence-based analysis. The Wavelength review concluded that there is no single, standout site on the island that scores highly across all criteria but that in overall terms, Smith Bay ranked better than other potential locations and is an appropriate location for this port.

There remains the need for significant regulatory oversight (through the imposition of conditions) and investment by the proponent, should the port be approved.

The AR concludes that the desktop analysis was an acceptable way to shortlist and consider potential sites as required by Guideline 6, which was further supported by the multi-criteria analysis undertaken by Wavelength, which found Smith Bay to be in the top 2 sites analysed.

The AR concludes that Smith Bay is considered to be an appropriate site for the proposed port development.

5.3 Built Form

Built Form and Design - Guideline 18: The development is proposed in an area that is a relatively remote coastal landscape that is natural in appearance. There are no other developments of this scale or type situated along this portion of coastline. The proposed development will establish a prominent visual feature along the coastline. Kangaroo Island is internationally known for its natural beauty and this must be considered in the built form and design of the proposed development.

Alternative Structures (in-water) - Guideline 7: The proposal includes the construction of a solid causeway that will extend approximately 200m into the ocean for the purpose of loading the timber products onto the ships at the attached floating berth. A solid causeway, as proposed, is likely to inhibit the natural water flow within Smith Bay, and potentially lead to pooling of water upstream. The nature and level of impacts of the proposed causeway on the marine environment (including water temperature), and the ecosystems, recreational and commercial operations reliant upon the waters of Smith Bay, have not been detailed. Merits of alternative in-water structures (including a jetty) should be investigated to determine the most appropriate structure for the area and operation.

Chapters 3 and 4 of the EIS, Chapter 3 of the 1st Addendum and Chapter 4 of the 2nd Addendum relate to the built form of the proposal.

5.3.1 In-water component

The wharf structure has been designed to enable berthing of Panamax and Handy-max vessels to minimise the number of ship movements per annum required for the export of timber product. The EIS identified that the berth face needs to be wide enough to accommodate a turning articulated vehicle and to enable large vessels to berth securely.

The EIS contained details of a solid rock causeway (extending up to 250m) with an attached link span bridge (approximately 170m long) leading to a floating berth pontoon (168m x 41m) positioned approximately parallel to the shore, with associated restraint dolphins and bollards, and on-land dredge material settling ponds. The approach was to be dredged up to a depth of 13.5m, requiring dredging of up to 100,000m^3.

The design and built form of the in-water (i.e. wharf) component was refined following public and agency consultation and as identified in the Addendums now consists of:

- an open fully piled jetty (up to 650m long)
- a link span bridge connected to a floating pontoon and tug mooring facilities
- restraining structures (piled steel structures that extend above the water level and are not connected to shore)
- mooring dolphins.

The Addendums outlined that the piled jetty would be formed using tubular steel piles approximately 1m in diameter, which would be driven into the seabed at approximately 12m intervals with the finished deck being nominally 5m above the sea level[13].

The piling works would be performed from a jack-up (piling) barge fitted with a crawler crane and hydraulic impact hammer on the deck for pile driving, eliminating the need for any mooring anchors and heavy chains[14].

Marine paint would be applied offsite to all steel elements of the jetty and other permanent piled structures (e.g. restraint dolphins). Anti-fouling coatings will not be applied.[15]

The redesign will not require any dredging and as such the associated on-land dredge material settling ponds have been removed. All other components of the proposal remain the same. A tabular summary of the changes is presented in Figure 11.

The Addendums identified that the design will be refined further during the detailed design phase, should approval be granted.

Description provided in Draft EIS	Change in response to public comments
Dredged berth pocket and dredged approach areas.	No dredged berth pocket or approach areas (and no on land dredge spoil management required).
Navigation aids.	No change to infrastructure, location varied.
Floating pontoon wharf with wharf furniture (fenders, bollards, kerbs, etc).	No change to infrastructure, location varied.
Restraint dolphins for restraint of pontoon.	No change to infrastructure, locations varied.
Mooring dolphin at either end of wharf for vessel head and stern lines.	No change to infrastructure, locations varied.
Linkspan bridge.	No change to infrastructure, location varied.
Approach (causeway and suspended deck).	Approach is a suspended deck (no causeway).
Tug mooring facility/pen.	No change to infrastructure, location varied.

Figure 9: Changes to offshore components in the Addendum resulting from responses (Addendum Table 3-1)

The impact of the in-water components of the built form on the marine environment is discussed in detail at section 5.4.2.

The EIS included a visual amenity assessment at Chapter 23 and Appendix R. This was updated in the 1st Addendum at section 4.10 and Appendix F. This assessment used a conceptual 3D model to show

[13] First Addendum Chapter 3, p 10

[14] First Addendum Chapter 3, p10

[15] First Addendum Chapter 3, p12

the major components of the onshore and offshore infrastructure, with line of sight images produced for both before and after the proposal.

Figure 10 – Sensitive receiver locations (Addendum, Appendix F – Figure 1, and EIS Appendix R2)

Twelve onshore locations were identified for visual assessment, of which six are considered sensitive receivers as they are private residences along with one commercial operation. Two view points from either end of Smith Bay and one from the ocean were also assessed. Although it is known that some of the chosen locations have established vegetation to obscure views (locations 9, 10, 11 and 12) to present a 'worst-case' scenario in relation to visual impact, it was assumed that each location currently has an unobstructed view of Smith Bay and the subject site[16].

The line of sight modelling showed that all locations assessed would have a view of the proposal, if unobstructed, to some degree.

The updated assessment identified that the revised design overall would provide a visually less obtrusive view from land at the majority of locations as the pontoon and berthed vessels would be located further offshore. However, berthed ships would be more visible at two viewpoints at either end of Smith Bay (5a and 5b) and would remain relatively unchanged at eight locations (6, 7, 8, 11a, 11b, 11c, 12 and 13). At locations 9a and 9b, the pontoon and berthed vessel would be more visible[17]. This is the location of Molly's Run, a bed and breakfast business located approximately 600m south-east from the proposal site. Impacts on Molly's Run are discussed in Section 5.5.2.

[16] EIS Appendix R2

[17] First Addendum, Appendix F

5.3.2 On-land components

The onshore timber storage area is proposed to be divided into two areas to provide approximately 4.2ha of space to be used for stockpiling up to 56,200 tonnes of logs within the southern storage area (2.5ha) and up to 80,000 tonnes of woodchips in the northern storage area (1.7ha). The southern storage area can be used to accommodate other cargo when not required for logs.

Materials handling systems include: export and ship loading conveyor system, vessel cranes, receival and sampling facility and reclaim hoppers, truck weighbridge and potential truck wash facilities. No wood chipping or wood processing would occur on site.

Other ancillary onshore components include: internal access roads, site access road to North Coast Road, stormwater drainage and retention system, security fencing and lighting, site offices, product testing room, generator, car parking, diesel storage tanks (up to 20,000L) and associated spill bunding.

The port infrastructure must comply with the following relevant Australian Standards:

- AS4997-2005 Guidelines for the Design of Maritime Structures
- AS1657-1992 Fixed Platforms, Walkways, Stairways and Ladders – Design, Construction and Installation
- AS2159-1995 Piling – Design and Installation
- AS1554-2004 Structural Steel Welding.

The EIS included a visual amenity assessment of the proposal.

It is noted that the site is significantly cleared of vegetation and the visual amenity of the area is already affected by existing and former land-based abalone aquaculture operations. Although these operations are considered low-scale, it does create a somewhat industrial look on the landscape. However, given there are no other developments of the scale or type proposed along this portion of coastline, the proposed development will have a significant visual impact, with the impact being exacerbated when a ship is in port. A landscape quality[18] assessment was undertaken which identified that the existing rating for the Smith Bay foreshore is 6.5 and would decrease to a rating of 5.0 after construction[19].

As identified previously, the line of sight model identified that all locations assessed would have a view of the proposal to some degree.

There are no communities close to or overlooking Smith Bay, however there are two private landowners who graze and crop nearby agricultural land, and one residence that is used for tourist accommodation (bed and breakfast). Views of the development would be visible from some elevated positions.

The EIS proposed the use of landscaping and use of colour (painting all buildings and infrastructure in colours that blend with the natural and surrounding environment) and patterning of design and use of materials that integrate visually into the surrounding environment to mitigate some of the visual impacts[20].

[18] Relates to the overall visual scenic beauty and/or character associated with an area

[19] EIS Chapter 23, p506 and Appendix R1

[20] EIS Chapter 6, p116 and 118 and Chapter 23, p512

The AR concludes that elements of the proposal, by their very nature, will be visually obtrusive. It is considered that the revised design overall provides an improvement on visual amenity impacts related to the in-water components of the proposal, in that although the jetty will extend further into the bay and some locations may have a clearer view of the jetty structure, it is likely to be less imposing compared the original design as the vessels will be berthed further out at sea and appear smaller. In addition, an open jetty is considered to be less visually obtrusive than a solid rock causeway for sensitive receivers closer to the shore.

The expected visual impacts of the proposal can be partially mitigated through the use of appropriate landscaping. It is recommended that all vegetation screening and landscaping be established prior to operations commencing. To ensure appropriate vegetation is selected, it is recommended that a Landscaping Plan be prepared in consultation with the Kangaroo Island Landscape Board.

The use of colour and patterns in the design of key structural components can also help to reduce the scale and mass of structural elements and mitigate the impact on views and landscape character. Should the proposal be approved, appropriate planning conditions can be imposed to ensure the use of an appropriate palette.

5.4 Environmental Impacts

5.4.1 Coastal Processes

Alternative Structures (in-water) - Guideline 7: The proposal includes the construction of a solid causeway that will extend approximately 200m into the ocean for the purpose of loading the timber products onto the ships at the attached floating berth. A solid causeway, as proposed, is likely to inhibit the natural water flow within Smith Bay, and potentially lead to pooling of water upstream. The nature and level of impacts of the proposed causeway on the marine environment (including water temperature), and the ecosystems, recreational and commercial operations reliant upon the waters of Smith Bay, have not been detailed. Merits of alternative in-water structures (including a jetty) should be investigated to determine the most appropriate structure for the area and operation.

EIS Chapter 10, Appendix G, 1st Addendum Section 4.3 and 1st Addendum Appendix C1 relate to coastal processes. The EIS and Appendix G contained a detailed assessment of the effects of the causeway on coastal processes in Smith Bay and included the development of a hydrodynamic model and simulation of coastal processes along the Bay.

The north coast of Kangaroo Island is a relatively moderate to low energy environment as it is largely sheltered from the prevailing south-westerly swells in the Southern Ocean[21]. The intertidal beach area of Smith Bay consists almost entirely of red orange sandstone and basalt cobbles and boulders that have been weathered by wave action.

[21] Edyvane, K 1999, *Conserving Marine Biodiversity in South Australia Part 2, Identification of Areas of High Conservation Value in South Australia*, SARDI report no. 39, F2007/000565-9

Figure 11a: Foreshore, Smith Bay (EIS Plate 10-1 / EIS Appendix G Figure 2-11)

Figure 11b: Foreshore, Smith Bay (EIS Plate 10-1 / EIS Appendix G Figure 2-11)

The proponent undertook investigations, including the deployment of buoys into the Bay for a period of 12 months, to record the wave and current profile of Smith Bay and turbidity and temperature data.

The results showed that Smith Bay is dominated by waves from the north-north-west (70%), with 30% coming from the north-north-east, with a median wave height of 0.52m and a peak wave height of 2.3m[22].

In addition, sediment sampling and analysis was undertaken at 19 locations.

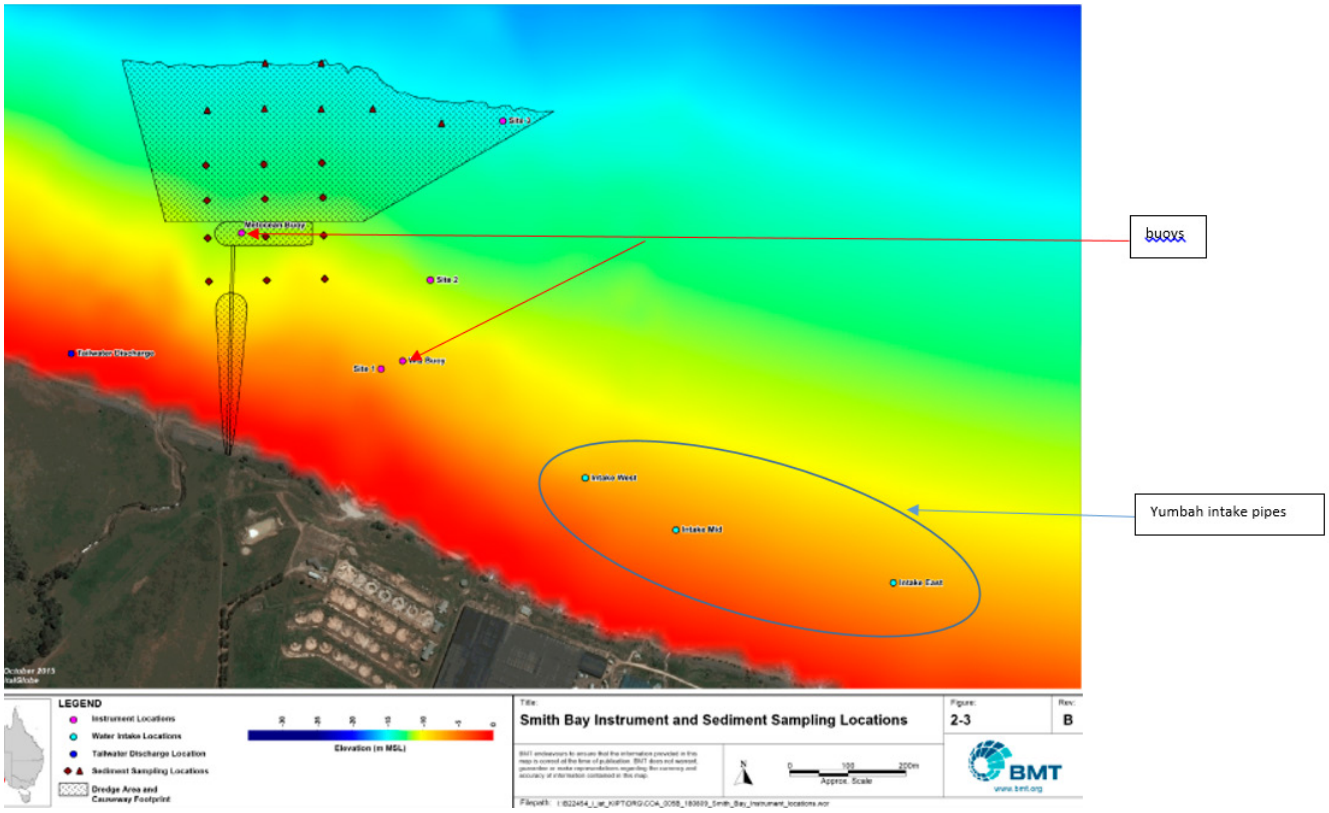


Figure 12: Location of data collectors and Yumbah intake pipes (EIS Appendix G)

The EIS investigations identified that the currents in Smith Bay are driven by a combination of tides, local winds and storm surges and predominantly flow parallel to the coast west-north-west during flood tides and east-south-east during ebb tides. The mean current speed was 0.15m/s with a net effect of a very slight overall west-north-west movement[23].

The original design included a solid rock causeway extending approximately 250m offshore. Submissions on the original design, as outlined in the EIS, raised concerns related to:

- interruption of tidal flows by the causeway which could result in increased seawater temperatures in Smith Bay and near Yumbah's seawater intake pipes, which may affect the health of the abalone
- possible entrapment of Yumbah's effluent output into the seawater intake area, which could also affect the health of the abalone
- interruption of longshore sand drift along the coast
- potential seabed erosion caused by altered flows and wave energy
- accumulation of wrack around the causeway.

[22] EIS Chapter 10, p195 and Chapter 9, p157

[23] EIS Chapter 10, p196

The proponent responded to these concerns by amending the design to abandon the causeway in favour of a longer (up to 640m) fully open piled jetty structure, and removing the dredge pocket. The proponent undertook further assessment of the potential coastal process impacts associated with the revised in-water design. Additional hydrodynamic modelling was not undertaken.

The assessment on the amended design identified that the open piled jetty structure would lessen the impact on the coastal processes at Smith Bay. The updated assessment included in the Addendum (Appendix C1) identified that the new design would not impede currents within the bay, would allow sand and wrack to move more freely along the shore and would have no effect on seawater temperatures.

The open piled design and the barge/floating pontoon will likely generate a localised zone of reduced wave height at the shoreline due to the partial blocking of incoming wave energy (30–50% reduction in wave height in the immediate lee of the floating pontoon and less than 5% at the nearest Yumbah intake pipe[24]). This impact is considered minimal and will not result in any significant disturbance to the Smith Bay foreshore or Yumbah's intake pipes.

In addition, the Addendum identified that the intertidal beach area and shoreline would not be disturbed during construction and therefore would not impact upon existing coastal processes at the site[25].

The Department for Environment and Water advised that the amended open jetty design largely ameliorated its original, primary concerns with the project of potentially significant impacts on the nearshore intertidal and marine environment that would have resulted from a solid causeway, along with the construction and management issues associated with that.

The AR concludes that:

- **the revised design removes, to a large degree, potentially adverse impacts to coastal processes that may have resulted from a solid causeway**
- **the revised design will have negligible impacts on the coastal processes at Smith Bay and will have no discernible impact on sea water temperature within the bay**
- **the shoreline at the site is resistant to erosion and the revised design should have no impact on this**
- **wrack and sand accumulation is expected to be negligible with the revised design.**

If approved, any residual impacts can be adequately managed through the development and implementation of Construction and Operational Environmental Management Plans.

5.4.2 Marine Environment

Coast and Marine - Guideline 2: As the proposed development is within, and directly adjacent to, the coastal waters of Smith Bay, there will be direct impacts to this particular environment. The ecology of the area must be investigated and understood to accurately identify the impacts from the construction and operation of the development, and to determine appropriate measures to manage, offset or mitigate these impacts. Although the area is not within a Marine Park (State), the construction and operation of the proposal, including the passageway of ships to and from the port and wharf may still have impacts on the neighbouring Marine Parks (i.e. Encounter and Southern Spencer Gulf Marine Parks).

[24] First Addendum Section 4.3, p16

[25] First Addendum Section 4.3, p16

Native Vegetation and Fauna (Marine and Terrestrial) - Guideline 9: The proposed site is in an area that is mostly cleared of native vegetation, however patches of vegetation remain, and although fragmented these may provide critical habitat for fauna. Investigation into vegetation on surrounding properties and within the adjacent marine environment should also be undertaken to determine if the proposed development and associated activities will impact upon these habitat areas and the species, including migratory species, that may be reliant upon them.

5.4.2.1 Marine Water Quality

A summary of the impacts on the adjacent aquaculture operation (Yumbah) is presented at section 5.5.1.

EIS Chapter 9 and Appendix F, and 1st Addendum section 4.2 and Appendix C1 relate to marine water quality. EIS Chapter 4 and Appendix C3 relate to stormwater management.

Many submissions on the EIS were received that raised concerns regarding the potential impact on marine water quality of Smith Bay. Concerns included, but were not limited to: impacts of dredging, turbidity, sedimentation plumes, ballast water discharge and fuel/oil spills.

The original design included dredging of a 9.2 hectare (100,000m^3) berthing pocket and use of this material for construction of a solid causeway. The original design had a high likelihood of environmental impact with a significantly larger footprint and substantial risk of impacts from turbidity and sedimentation on the surrounding benthic environment. Following community and agency feedback, the proponent amended the design of the in-water elements of the proposal, as presented in the Addendum, which removed the need for dredging and creation of the solid causeway.

Key components of the proposal (amended design) that may affect water quality in Smith Bay are:

- construction of the open piled jetty (release of at point sediments and potential mobilisation of contaminated material from pile driving)
- stormwater runoff from the structures
- turbidity and movement and dispersion of sediments from ship movements
- potential fuel, hydraulic fluids or chemical spills.

The proponent undertook several investigations prior to and during the preparation of the EIS to provide baseline data. Investigations included:

- bathymetric surveys and hydrodynamic modelling
- offshore geophysical investigations (supplemented by onshore boreholes to aid interpretation of data)
- morphology and chemistry investigations of the shallow (<3m) sediments underlying Smith Bay (at 12 locations)
- sediment sampling at greater depths (5m and 17.5m) for engineering and design purposes
- water sampling for Total Suspended Solids (TSS) and nutrient levels.

These investigations resulted in the establishment of a solid baseline record of regional water movement patterns under varying wind and wave conditions, which allows for greater understanding of the movement of natural turbidity and potential sediment plumes from the construction and operation of the proposed facility.

The proponent also undertook analysis of the collected sediment samples for a range of potential contaminants. The findings of this investigation suggest that the sediments in the study area in Smith

Bay do not exceed any guideline levels for dredging or disposal[26]. Metals and metalloids were found in low concentrations well below sediment quality guideline levels and no potential acid sulfate soils were detected[27]. The revised design, with no requirement for dredging, will disturb a much smaller volume of seabed, and given the lack of existing contaminants in the sampled sediments, the potential for mobilisation of contaminants during construction is considered negligible.

The sediment samples consisted mostly of sand and gravel (70-90%), with a smaller proportion (10-25%) of fine sediments (silt and clay)[28]. The EIS identified that at >10m depth the seafloor consists of a mixture of rubble, shell grit and sand[29]. This larger-sized material typically will be less likely to be resuspended during construction, and if it is, it is likely to settle quickly resulting in lower turbidity that may impact benthic ecosystems or Yumbah's intake.

The deployed buoys (as mentioned in section 5.4.1) recorded that turbidity in Smith Bay generally remained below 1NTU[30] during the 12 month monitoring period, which is considered to be very low. Elevated turbidity periods occurred with coincident weather patterns but turbidity did not exceed 10NTU at any time. Observed turbidity was lower during spring and summer, with turbidity slightly higher in winter, and near-bed turbidity was slightly higher than surface turbidity[31].

The buoys recorded surface water temperature ranging from 14°C in winter to 22°C in summer, with occasional spikes to 25°C. Salinity ranged from 34-35 parts per thousand (ppt) during winter to 36-39ppt during summer. The pH of marine water ranged from 7.9-8.6, which is similar to the typical pH of marine water of around 8.2. Collated data indicates that Smith Bay is characterised by relatively low levels of nutrients[32].

Water sampling recorded that Total Suspended Solids (TSS) data in the Bay were mostly less than 5mg/L with a near shore exception collected during visible natural turbid conditions, which had a TSS value of 41 mg/L[33].

The 1st Addendum included a revised assessment on the potential impacts to marine water quality associated with the amended design (Addendum Appendix C1). This assessment was based on the assumption that the majority of the tubular steel piles would be installed entirely by percussive driving and that if a drill/drive method is required, all drill cuttings would be retained on the construction barge for subsequent disposal on land. The revised assessment determined that there would be significantly less impact on water quality in Smith Bay compared to the potential impact from dredging and that negligible sediment would be released into the water during piling[34].

The revised assessment identified that small levels of sediment may be intermittently resuspended from the bed during piling, barge manoeuvring, anchoring and construction vessel movements. However the quantity of sediment re-suspended will generally be low and the intensity, frequency and duration of any associated plumes would be short term and localised[35]. The low natural turbidity

[26] EIS Chapter 16, p 367 and Appendix F1

[27] EIS Chapter 9, p 164

[28] EIS Chapter 9, p 164

[29] EIS Chapter 9, p184 and Chapter 12, p237

[30] Nephelometic Turbidity Unit (NTU) is the unit used to measure the turbidity of a fluid of the presence of suspended particles in water

[31] EIS Chapter 9, p 164

[32] EIS Chapter 9, p164-165

[33] EIS Chapter 9, p 165-166

[34] First Addendum Section 4.2, p 15

[35] First Addendum, Appendix C1, p3

means that management and mitigation of turbidity during construction will be important to prevent any localised impacts.

The EPA advised that the potential water quality impacts would be significantly reduced as a result of the redesign of the wharf and the removal of the need to dredge and that any potential water quality impacts that may still result during construction and operation of the jetty could be adequately managed.

Appendix C1 to the Addendum identifies the mitigation measures to minimise turbidity impacts generated by marine construction works[36]. If approved, these measures would be incorporated into a Construction Environmental Management Plan.

As no changes to the operational shipping and use of the wharf will result from the amended design, all other water quality impacts as presented in the EIS remain the same.

Fuels and chemicals

The construction and operation of the wharf will involve the use of plant and equipment and vessels using the bay. With this, there is a risk of potential fuel, oil, hydraulic fluids or chemical spills. This risk must be appropriately managed. By law, construction contractors must comply with established fuel/oil/chemical storage and handling standards and protocols. Industry standards and requirements related to emergency control, management and clean-up procedures are required, including vessel maintenance, reporting of leaks, availability of spill response equipment and use of spill kits.

The EIS identified that all fuel and chemical supply on the transport barges would be stored in bunded areas[37].

The EPA advised it was satisfied with the details contained in the EIS noting that, if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate and that fuel and chemical storage and handling will be prescribed by the licence.

Overall, it is expected that with the implementation of appropriate measures the risk to water quality associated with fuel, oil or chemical spills would be low, and such risk can be adequately managed through the EPA licence.

Marine vessel activities

Marine vessel activities during construction and operation have the potential for contamination of the marine water from the following: hydrocarbons, ballast water, antifouling compounds, blackwater, greywater, other wastewater, solid waste, and airborne contaminants (e.g. woodchips and wood dust).

It is acknowledged that ballast water, antifouling, waste and wastewater are regulated by international conventions and state and Commonwealth legislation that all vessels operating in Australia must comply with. In addition, the EPA has recommended practices for biofouling and ballast water as part of its *Code of Practice for Vessel and Facility Management (Marine and Inland Waters).* Impacts and management of issues associated with ballast water and biofouling are discussed in detail in section 5.4.3.1.

[36] First Addendum Appendix C1, p5

[37] EIS Chapter 9, p 183

The EIS identified that ships using the facility would be required to comply with all relevant maritime legislation and that procedures to manage potential marine contaminants associated with shipping activity would be developed as part of the Operational Environmental Management Plan[38].

The EIS also identified that vessel owners would be responsible for the storage of all wastewater and solid wastes generated while berthed at Smith Bay and that it is not anticipated that any waste materials would be brought onshore. Black and grey water would not be discharged unless such material met relevant water quality standards and biosecurity requirements[39]. This commitment will be contained in a Waste Minimisation and Management Plan, prepared in consultation with the EPA.

Winnowing of sediments associated with propwash during ship movements may result in some degree of sediment mobilisation, which may impact water quality through increased turbidity. Modelling undertaken (EIS Appendix F2) was based on Panamax ships, with a single propeller operating at full acceleration upon approach and departure, with a berth time of 8 hours (i.e. no propeller movement). The modelling concluded that impacts on water quality would be temporary and of short duration, with the 99th percentile figure failing to show any plume above the minimum scale limit (i.e. 1.0mg/L). Maximum turbidity increases of up to 10NTU would occur but would be contained to the immediate vicinity of the wharf. No plumes would extend to the Yumbah seawater intakes[40]. With only approximately one to two shipping movements per month, impacts of propwash from ship movements on water quality within Smith Bay is considered to be negligible.

The operational propwash modelling assessment was updated for the revised design. The revised modelling considered differing weather conditions on any propwash sediments. The revised assessment concluded that sediment resuspension impacts associated with shipping movements were reduced compared to the original design[41].

Any propwash sedimentation impact will be temporary in nature (i.e. as ships berth and depart) and with the amended design, ships will be berthing at approximately -14m depth to the natural seabed, where the sea floor consists of coarse silt/sand, rubble and shell grit, and as such it is expected that any sediment mobilisation would settle quickly.

[38] EIS Chapter 9, p 183 and 184

[39] EIS Chapter 4, p90

[40] EIS Chapter 9, p184 and Chapter 12, p253

[41] First Addendum Appendix C1, p4

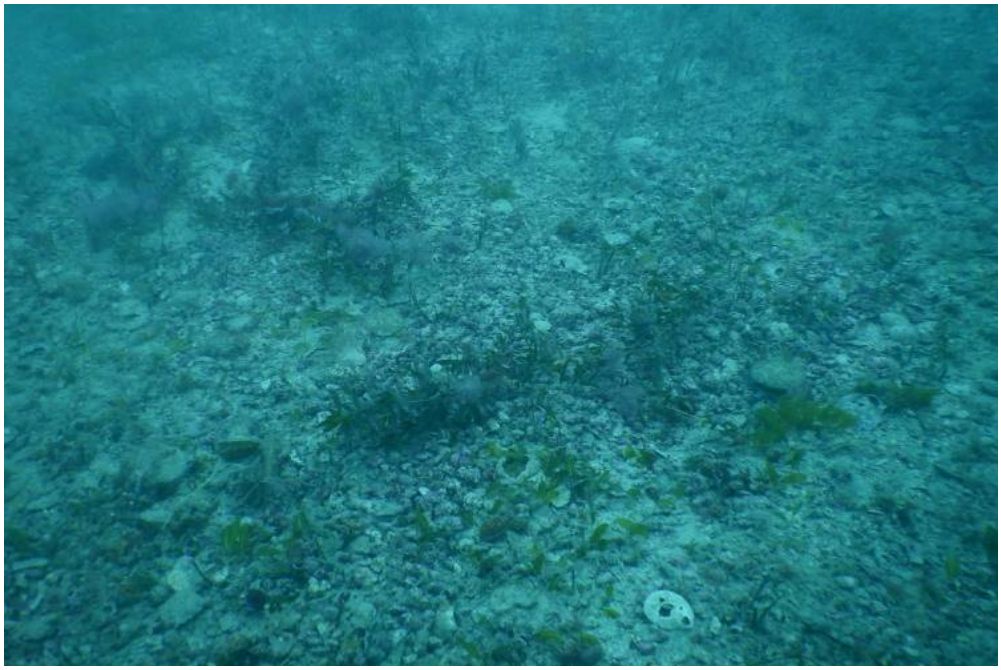


Figure 13: Seafloor in the vicinity of the proposed pontoon/barge (Addendum Figure 4-1)

Barge surface water

The EIS identified that the floating pontoon/barge would comprise a surface of concrete that would be graded to prevent any runoff entering into the bay. The directed surface water flows would enter a series of grated inlet pits, each fitted with a litter basket to trap debris. An end of line gross pollutant trap and oil, grease and water separator would intercept pollutants that might enter the drainage system prior to discharge to Smith Bay.[42] There is a high likelihood that woodchips and debris will remain on the pontoon/barge upon completion of the export activity. This will require pontoon/barge maintenance to be performed following each export process to prevent build-up of timber products on the pontoon/barge that may impact the surface water management system. Maintenance would include manual sweeping all debris into the litter baskets and immediate removal of the contents for appropriate disposal onshore. Accumulated sediment, oils and grease within the pollutant traps and separator are to be removed using a vac truck on an annual basis with contents disposed of in accordance with EPA requirements. The EPA advised that this is considered critical to the ongoing operation of the system to ensure it functions as per the design.

The EIS identified that the proposed separator would be a class 3 separator. Use of an oil water separator is supported, however in its submission, the EPA advised that with the nature of the product being loaded and vehicle movements there is a high risk of woodchip product, fine dust and hydrocarbons from use of plant and equipment being present in the stormwater discharge. The EPA recommended the use of class 1 separators for high risk areas where a class separator is defined to achieve a discharge concentration of less than 5 mg/L of oil under standard test conditions and should be used when the separator is required to remove very small oil droplets such as those from leakage. The EPA also raised concern that the system as proposed may not sufficiently trap fine dust that will fall on the wharf surface and combine with stormwater runoff from the wharf.

In its response, the proponent advised that the detail of design for the oil water separator and any water treatment systems to be installed at the facility would be confirmed and endorsed, in liaison with the EPA, if planning consent is given. The EPA advised this is acceptable, however reiterated the

[42] EIS Chapter 4, p65

need for a class 1 oil water separator to be used in high risk areas where very small oil droplets are likely to be present. If approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. The issue of surface water management, including oil water separation and the class of separator required, will be covered by the licence.

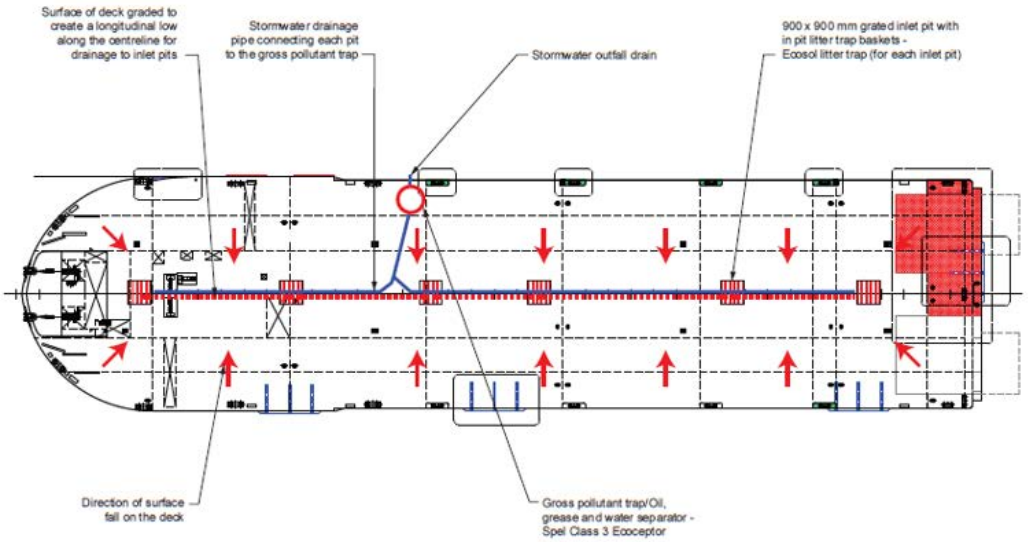


Figure 14: Wharf/barge surface water management system (EIS Figure 4-6)

Conveyor and fine dust particles

In relation to the proposed woodchip conveyor, this would be covered with a canopy, and as such, woodchips should not enter the marine environment. However, the system may not sufficiently trap all the fine dust that will fall on the wharf surface and combine with stormwater runoff from the wharf and thus the wharf treatment system will need to account for fine dust particles. As a result, the EPA requested further information on how the proposed system would treat fine dust.

In its response, the proponent advised that, if approved, additional mitigation measures would be considered to further reduce fine dust from entering the marine environment. Potential measures identified included covering transfer points and using water sprays to supress dust production. These would be further explored during the final design stage. The proponent also committed to including information related to managing visual dust on a continuous basis in the Environment Management Plans. This would include measures to identify when, and from where, dust is being generated and protocols for when works may need to cease or be modified. The EPA advised this is acceptable, however reiterated the need for fine dust particles and woodchips to be accounted for. The Commonwealth DAWE also agreed with the EPA in regard to concerns related to potential dust and woodchip contamination of the marine environment. DAWE advised it was satisfied these concerns can be adequately addressed through appropriate management plans, reviewed and approved by the EPA.

On-shore surface water

Increased water turbidity may occur as a result of silt-laden stormwater runoff from the onshore site entering Smith Bay unless adequate management measures are in place. It is recognised that such runoff is likely to currently occur due to the substantially degraded nature of parts of the site and the lack of any stormwater management on site. Onsite stormwater measures are discussed in detail at section 5.4.8. As a result of these measures, the risk of silt discharges from the onshore construction and operational facilities entering Smith Bay is considered to be low. Any residual risk can be

adequately managed through the development and implementation of a Stormwater Management Plan.

The EPA requested, that, if approved, all key maintenance activities for the stormwater system as outlined in the Stormwater Management Strategy (EIS Appendix C3) are to be referred to and incorporated as a minimum into a Construction Environmental Management Plan and the Operational Environmental Management Plan.

The AR concludes that overall the revised design decreases the potential adverse impacts on the marine water quality however it does not remove all impacts or risks. The risk to water quality can be adequately managed through the preparation and implementation of Construction and Operational Environmental Management Plans with appropriate construction and mitigation measures, prepared in liaison with the relevant agencies including the Environment Protection Authority.

It is expected that ship movements would result in only minor effects on water quality within Smith Bay and that these effects would be confined to the immediate vicinity of the pontoon which will be positioned approximately 640m from the shore.

The assessment concludes that any propwash sedimentation impact will be temporary in nature (i.e. as ships berth and depart) and with the amended design, ships will be berthing at approximately -14m depth to the natural seabed, where the sea floor consists of coarse silt/sand, rubble and shell grit, as such it is expected that any sediment mobilisation would settle quickly.

Risks and issues associated with potential fuel, oil or chemical spills remain, however with appropriate management risk are considered low. These risks can be adequately managed through the required EPA licence.

Risks associated with waste and wastewater from incoming vessels are considered low, noting the compliance requirements of existing international and regulatory tools. The AR concludes that waste can be satisfactorily managed through the development and implementation of a Waste Minimisation and Management Plan, prepared in consultation with, and to the reasonable satisfaction of, the Environment Protection Authority.

The risks associated with stormwater runoff into the marine environment are also considered to be low as the proposed management systems are based on intercepting pollutants rather than treatment. By intercepting these pollutants, they will be trapped and can be disposed of appropriately with a low risk of them entering the marine environment. It is assessed that stormwater can be satisfactorily managed through the development and implementation of a Stormwater Management Plan, prepared in consultation with, and to the reasonable satisfaction of, the Environment Protection Authority.

5.4.2.2 Marine Ecology

EIS Chapter 12, Appendix I, 1st Addendum section 4.5 and Addendum Appendix C2 relate to marine ecology.

This section discusses the overall marine ecology of Smith Bay. Assessment related to specific marine ecology issues are discussed in detail in separate chapters as follows: impacts of dredging and shipping movements on seagrass (discussed in detail at section 5.4.4.1) and marine species (discussed in detail at section 5.4.4.2); introduction of pests (discussed in detail in section 5.4.3.1); impacts of noise on

marine species (discussed in detail at section 5.4.4.2); and changes in coastal process (discussed in detail at section 5.4.1).

DEW has undertaken mapping using satellite imagery (1:100,000) that identified continuous reef habitat extending approximately 800m offshore with predominantly bare sand further offshore. The scale of the mapping does not capture detail of the reef, sand or seagrass habitats. To gain a greater understanding of the marine environment and ecology the proponent engaged SEA Pty Ltd to undertake an ecological assessment of the marine environment of Smith Bay. This included conducting multiple dives at various locations and depths to identify the dominant marine communities and habitats and compile a list of flora and fauna inhabiting the bay. A remotely controlled underwater camera was also deployed on the seafloor to photograph communities at additional locations[43].

The proponent also commissioned hydrodynamic modelling to simulate marine water quality of the bay. The investigations identified:

- the substrate within approximately 150m of the shore consists mainly of rock and reef with a relatively thin veneer of sand
- the near-shore section of reef consists of both silcrete reef and loose rock
- further offshore (>10m depth) the seafloor consists of a mixture of rubble, shell and grit sand
- the bay supports a mixture of reef and seagrass communities in its shallow sections (<7-8m) with the seagrass communities becoming more dominant in deeper water (8-12m) and with seagrass progressively lessening until it becomes sparse to non-existent in deep water (15-17m).
- seagrass communities were healthy and vigorous
- no introduced species[44].

Table 12-1 of the EIS lists all species recorded during the dive survey.

[43] EIS Section 12.2, p233 and 236

[44] EIS Section 12.4, p 237 and First Addendum, Section 4.5.1, p18

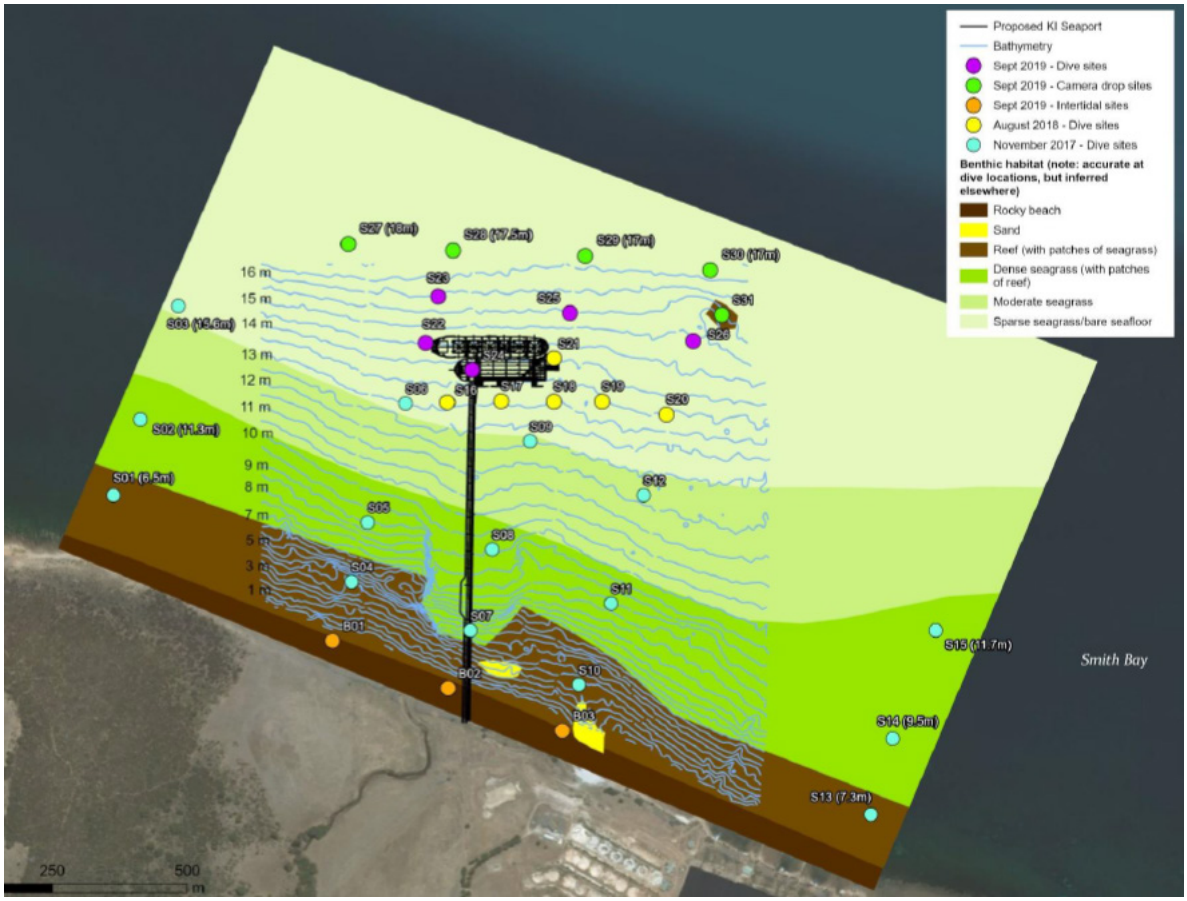


Figure 15: Location of dominant marine habitats in Smith Bay (Addendum Appendix C2 – Figure 4)

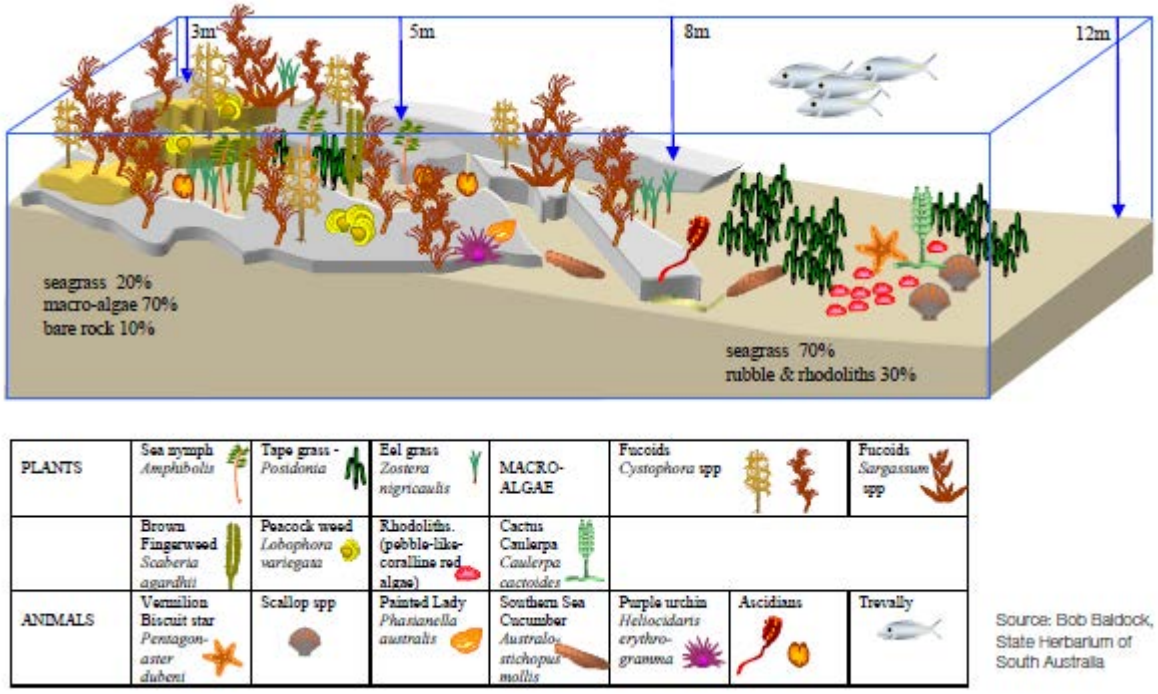


Figure 16: Types of marine habitats in Smith Bay (EIS Figure 12-4)

The EIS identified that the most significant impact to the marine ecology of Smith Bay would have been the direct loss of 10.2 hectares of mixed reef and seagrass communities from the construction of the originally proposed causeway and dredging of a berth pocket and approaches. In addition, the EIS estimated that approximately 2.5 hectares of additional seagrass loss would have resulted from indirect impacts associated with sediment fallout in the immediate vicinity of the dredge footprint and from shading[45]. The direct loss of seagrass associated with the original design would have also directly affected pipefish within the bay.

The revised design to construct an extended deep water open piled jetty, removing the causeway and associated need to dredge, will result in a significantly smaller area of seagrass and benthic communities being directly affected. In its submission on the 1st Addendum, DEW advised that the redesign of the in-water components of the proposal to that of an open wharf largely addressed its original concerns on the effect on benthic communities. PIRSA noted that the lengthening of the berth such that dredging would no longer be required thereby removing the risks directly related to dredging activities outlined in the original EIS.

Although the amended design will reduce impacts on the seagrass, benthic communities and the ecology of Smith Bay by extending the jetty structure a further 250m off shore approximately, it was identified that other benthic communities may be affected. The proponent undertook further assessment as part of the Addendum in relation to this possibility.

The proponent commissioned further studies of the revised location of the pontoon and approaches to assess the habitat, flora and fauna within the extended footprint. Five additional dive sites were surveyed, using the same methods employed during the EIS investigations. Four additional sites offshore from the revised berthing area were surveyed using camera drops.

In addition, intertidal surveys to identify the community of fauna inhabiting the rocky intertidal shore were undertaken at three locations. This was conducted by placing a $1m^2$ quadrat over the rocky substrate with the area inside each quadrat being searched and the organisms found recorded[46].

[45] EIS Section 12.5.4, p250 and First Addendum, Section 4.5.1, p 18

[46] First Addendum Section 4.5.2, p 18 and Appendix C2

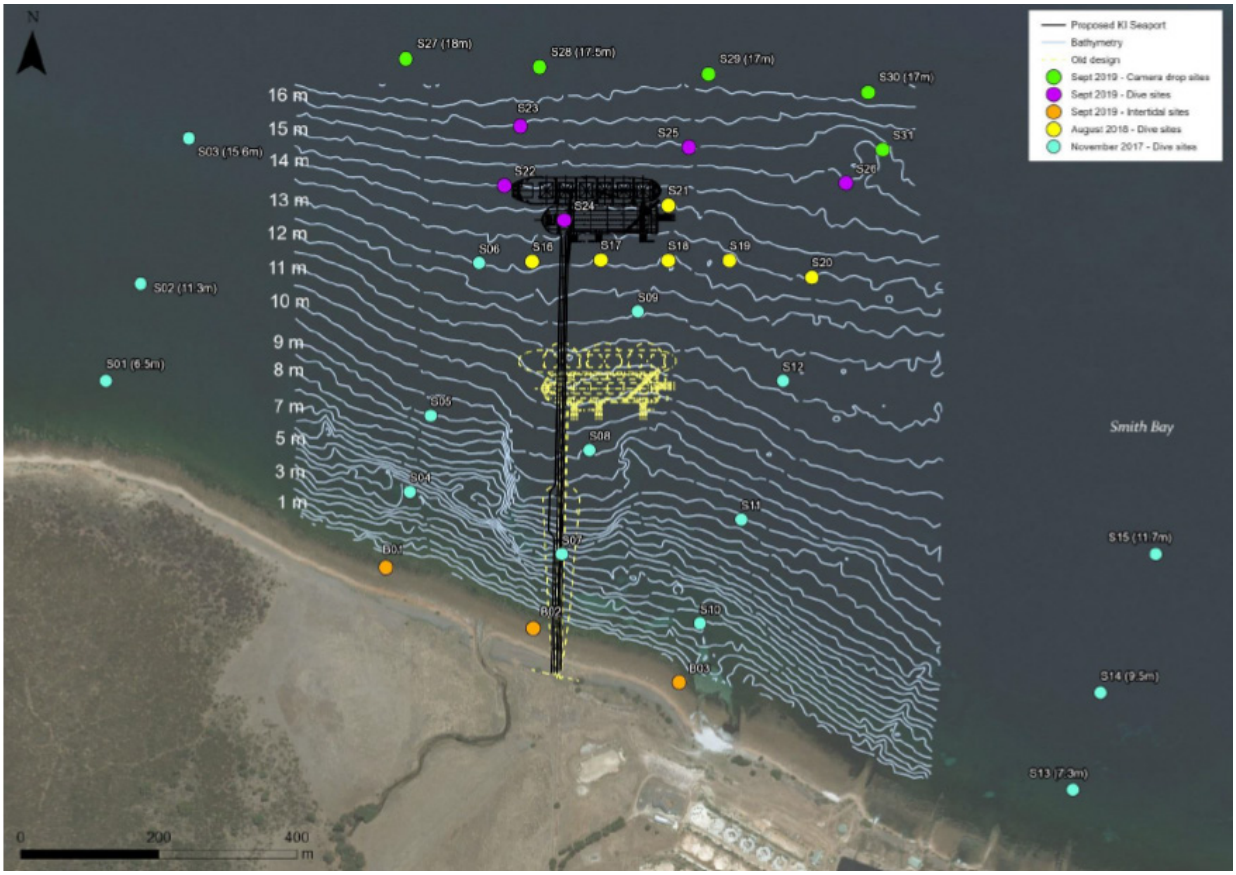


Figure 17: Location of marine and intertidal survey sites in Smith Bay used to inform the EIS and Addendums (1st Addendum Appendix C2 – Figure1)

The study identified that the seagrass remained sparse in the deeper water, with cover ranging from zero to five percent. Two additional crab species (smooth seagrass crab and bristled sponge crab) were found during the sub-tidal survey, neither of which is of conservation significance. No other new species were identified. The investigations identified that the seafloor in the vicinity of the revised pontoon location and approach consists mostly of rubble, shells and sand[47].

The 1st Addendum concluded that the only benthic communities that would be directly affected during construction of the extended open piled jetty would be where the piles would be driven into the seafloor. The Addendum identified that 156 piles would be required and that each pile would adversely impact 1m^2 of seafloor. This would result in approximately 0.02 hectares of benthic communities, mostly seagrass, being directly affected. It has been assumed that shading effects of the pontoon would remain the same as identified in the EIS as the pontoon itself has not changed. The EIS identified that shading associated with the pontoon may result in the loss of up to 0.5 hectares of sparse seagrass. Therefore, as a result of the design change, it is expected the total direct loss of seagrass would be 0.52 hectares. This is a significantly improved outcome compared to the original design that would have resulted in a direct loss of seagrass of 7.5 hectares.

As identified in section 5.4.4, clearance of native vegetation, including marine vegetation, requires approval under the *Native Vegetation Act 1991* and is subject to the provision of a significant environmental benefit (SEB). The calculation and final amount of the required SEB offset is to be determined by the Native Vegetation Council.

[47] First Addendum Section 4.5.3, p 18-19

It is expected that the jetty structure will provide an artificial reef habitat that will be colonised by a variety of reef species. This may, in part, compensate for some of the habitat loss associated with the construction of the jetty, however this will not be factored into any SEB calculations.

The number of shipping movements (up to 20 per year) will remain the same regardless of the change in design. Ship berthing and departure operations will result in some degree of sediment mobilisation, however this impact will be temporary in nature and with the amended design, ships will be berthing at approximately -14m depth to the natural seabed where the sea floor consists of coarse silt/sand, rubble and shell grit, as such it is expected that any sediment mobilisation would settle quickly. The impact to the benthic community and ecology of Smith Bay associated with this is expected to be negligible.

Smith Bay is not within, or in close proximity to, any Marine Parks. Vessels that will use the proposed facility will traverse through the General Use Zone of the Encounter Marine Park. As the number of vessel visits at the proposed facility is not anticipated to exceed 20 per annum, it is expected that this activity would not result in any impact to this Zone. Agencies did not raise any concerns related to this.

The AR concludes that the amended design has significantly reduced the impact on the benthic community and marine ecology of Smith Bay as major construction will now take place over a benthic habitat of minimal significance (i.e. sand and rubble).

Minimal marine vegetation clearance and disturbance will occur during the construction period and the ecological significance of the loss of seagrass and habitat during this period is considered minor and can be offset. Negligible indirect clearance is expected during the operational phase (from shading effects and some ship movement).

Any residual impacts can be effectively managed through the development and implementation of a Construction Environmental Management Plan prepared in consultation with, and to the satisfaction of, the appropriate Ministers.

5.4.3 Biosecurity

Biosecurity - Guideline 3: Kangaroo Island's remoteness and isolation has created a unique environment, free from many of the pests and diseases found on mainland Australia. The development of a port will increase the potential for the introduction of pest and nuisance species (both terrestrial and marine) which are a major threat to, and can have devastating impacts on, the 'island's environment and agricultural industries. Details on strategies to prevent and manage potential pest species is required to ensure the proposal will not impact upon the 'island's biosecurity.

Impacts on the adjacent aquaculture operation (Yumbah Aquaculture) are summarised at section 5.5.1.

EIS Chapter 15 and Appendices D2 and I5, 1st Addendum section 4.7 and 2nd Addendum Chapter 3 relate to Biosecurity.

The 2nd Addendum included a draft Biosecurity Management Plan, draft Marine Pest and Disease Management Plans for Construction and Operation and an example of a Biofouling Management Plan.

Although the EIS identified that 'Smith Bay will not be a First Point of Entry under the Commonwealth *Biosecurity Act 2015*[48], subsequent discussions between the proponent and the Commonwealth Department of Agriculture, Water and the Environment and the Department for Infrastructure, Regional Development and Cities, have indicated that as cargo is to be loaded onto international vessels the requirements of the Biosecurity Act apply. This implies that regardless of the intent for vessels to clear customs and biosecurity measures on the mainland, the Commonwealth may require the port at Smith Bay to be registered as a First Point of Entry port. PIRSA advised that should the Commonwealth determine that Smith Bay will be a future First Port of Entry, the proponent must discuss this matter with the Australian Government regarding design requirements. Any additional infrastructure that may be required to accommodate this would be subject to separate approval processes. The proponent is pursuing this avenue separately.

This does not impact the current assessment of the proposal, noting that any such application to be a First Point of Entry will be subject to assessment by the relevant Commonwealth departments and, if approved, the proponent would need to comply with the First Point of Entry biosecurity standards.

5.4.3.1 Marine

Ballast water is taken on board by vessels to maintain stability and trim. Ballasting and de-ballasting are carried out during cargo loading and unloading operations. As the proposal intends to export timber products to the international market, it is expected that vessels loading timber at the Smith Bay port may have taken up ballast water at various ocean locations and ports to stabilise the unloaded vessels on route to Smith Bay. They would then need to discharge this ballast water into, or in the vicinity of, Smith Bay leading to possible biofouling (biological fouling) which is the accumulation of micro-organisms, plants, algae etc. on submerged surfaces (including submerged parts of vessels). Biosecurity risks posed by the uptake of ballast water in one place and discharged in another can be considerable as ballast water may contain marine pathogens or organisms which on discharge into a different marine environment may adversely impact the flora and fauna of the receiving waters (including commercial species). Biofouling from international vessels entering Smith Bay therefore poses a risk of introducing pest species and or aquatic diseases

Australia is a signatory to the *International Convention for the Control and Management of Ships' Ballast Water and Sediments* (2004), and its terms are reflected in the Commonwealth *Biosecurity Act 2015*. The legislative obligations to manage ballast water and ballast tank sediment in all Australian waters are under the Biosecurity Act in line with this international convention. The Commonwealth has responsibility for ballast water and international vessel arrivals into Australia and the South Australian Government has responsibility for biosecurity management within South Australia (including South Australian waters).

The Biosecurity Act is the primary tool to ensure consistent domestic ballast water regulations are in place throughout Australia to reduce the risk of transferring marine pests between Australian ports.

As a requirement of the Biosecurity Act, shipping is subject to ballast water management requirements, including:

- vessels must have a ballast water management plan and certificate
- vessel masters must report to the Director of Biosecurity in regard to conformity with the Act

[48] EIS Chapter 4, p81

- vessels that have an in-vessel ballast water treatment system and have obtained approval of that method of ballast water management may discharge treated ballast water into the Australian Exclusive Economic Zone (EEZ)
- ballast water may be discharged within a 'same risk' area provided at least 95% of that ballast water was taken up and discharged within that area.

In addition to the requirements of the Biosecurity Act, vessels are also bound by the *Australian Ballast Water Management Requirements* and the *International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004* (the Ballast Water Management Convention).

The EIS identified that international vessels would exchange ballast water prior to entering the Australian EEZ (i.e. taken on the 'high seas' at least 200 nautical miles from the nearest Australian land), and that this water is less likely to contain marine pests which will pose a reduced level of risk to the biosecurity of Kangaroo Island[49].

As regulation of ballast water management occurs at the national level, a ballast water reception facility is not proposed to be constructed as part of the land-based component of the proposed development[50].

For domestic shipping movements, Smith Bay lies within a 'same risk' area (declared under the Biosecurity Act) which allows uptake and discharge of ballast water within that area. This ballast water is considered low risk and does not require further management under the Biosecurity Act.

It is recognised that Smith Bay and Port Adelaide are within the same risk area. The EIS identified that the waters around Port Adelaide have a number of established marine pests and that any vessels that come from this port would pose a significant biosecurity risk to Kangaroo Island from the discharge of ballast water as well as from biofouling.

[49] EIS Chapter 15, p341 and 342

[50] EIS Chapter 15, p342

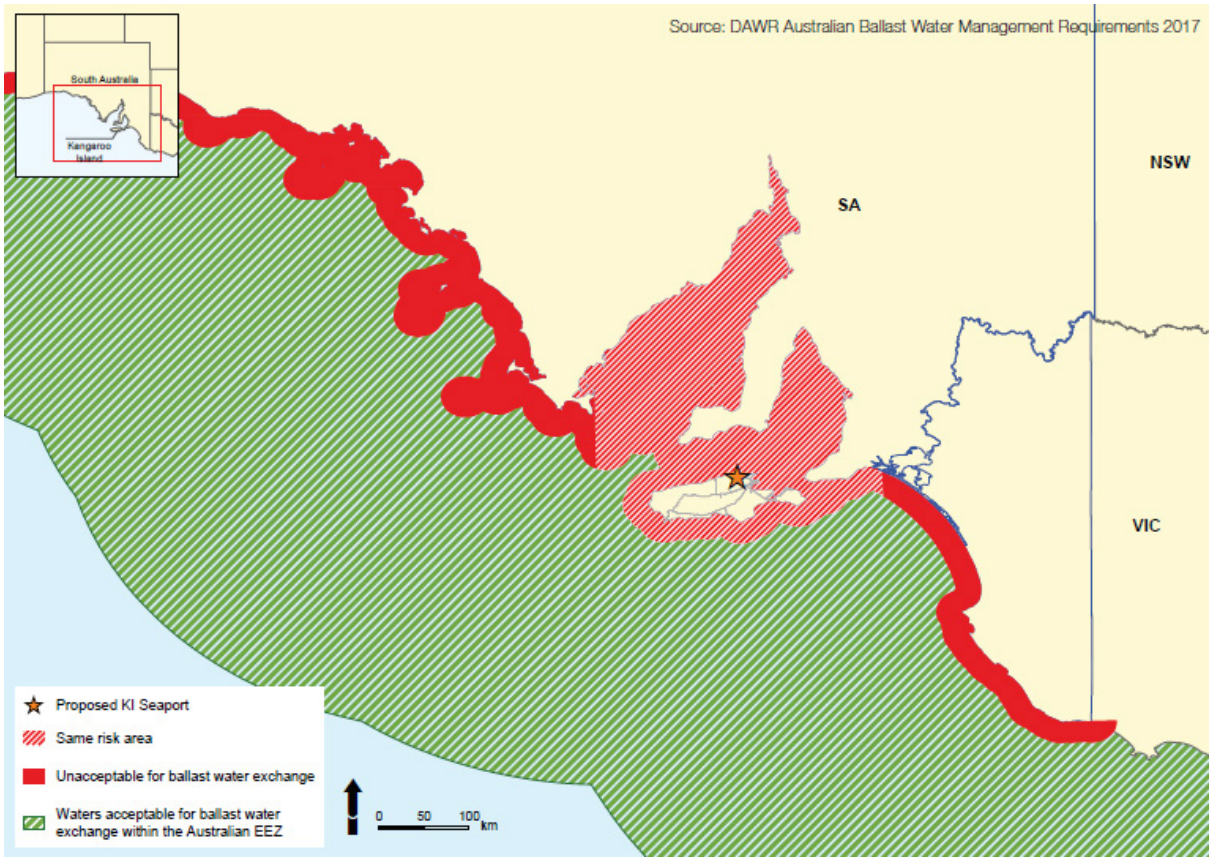


Figure 18: Same-risk area for ballast water exchange (EIS Figure 15-3)

The EIS identified the following significant diseases for abalone and oysters on Kangaroo Island:

- abalone viral ganglioneuris (currently detected in wild abalone in Victoria and Tasmania, but not in South Australia)
- the parasitic Perkinsus (already present in wild abalone in South Australia)
- Pacific oyster mortality syndrome (detected in feral oysters in the Port River 2018)[51].

Appendix I5 of the EIS contained a summary of listed marine pests (*Australian Government - Australian Priority Marine Pest List 2019*)[52] that are of concern in South Australia, having been declared as 'noxious' under the *Fisheries Management Act 2007* and/or have been recorded in Kangaroo Island waters.

PIRSA expressed concern that a bulk carrier vessel servicing the proposed facility may take up large volumes of water at Port Adelaide and discharge it within the waters of Smith Bay. The EIS identified that the use of this same risk area for vessels servicing the port at Smith Bay is not contemplated[53] and as outlined above, international vessels would exchange ballast water at least 200 nautical miles from the nearest Australian land. However, the EIS does identify that domestic shipping (used primarily during the construction phase) would likely exchange ballast water at Port Adelaide.

[51] EIS Chapter 15, p 331

[52] Note – list was in draft format during preparation of the EIS

[53] EIS Chapter 15, p 343

PIRSA (Biosecurity SA) has advised that ballast water exchange and uptake from Port Adelaide is not supported (both during the construction or operational phase) due to the risk of aquatic pest and disease transfer, in particular the Pacific Oyster Mortality Syndrome (POMS); however ballast water exchange and uptake from Gulf St Vincent may be acceptable. DEW advised that of marine pests, the uptake of ballast water from Gulf St Vincent should only be permitted and restricted to open waters, defined by the minimum distance from any shore or from Port Adelaide; and equally release of any ballast water should only be permitted in, and restricted to, open waters at a defined distance from Kangaroo Island shorelines.

Measures to control ballast water exchange and uptake can be incorporated into a Marine Pest Management Plan and a Biosecurity Management Plan, prepared in consultation with, and to the reasonable satisfaction of relevant agencies, both of which would be conditions of any approval.

The proponent committed, in its 1st Response Document, that tugs from Port Adelaide would not be used in either the construction or operational phases. This is noted, however does not ameliorate the potential issue of ballast water exchange from other incoming domestic vessels serving the proposed port. PIRSA (Biosecurity SA) has advised that use of tugs from Port Adelaide would not pose any more of a risk than other vessels coming out of Port Adelaide and that use of such tugs is acceptable subject to strict biofouling protection and ballast water biosecurity procedures. These measures can be incorporated into a Marine Pest Management Plan, which would be a requirement if the proposal is approved. The proponent has committed to the preparation of a Marine Pest Management Plan to address the risk from ballast water and biofouling. This plan would be prepared in consultation with PIRSA (including SARDI), KI NRMB, Biosecurity SA, SARDI, and the Commonwealth Department of Agriculture, Water and the Environment (DAWE)[54].

The proponent proposed that the Marine Pest Management Plan would reflect the requirements of the Commonwealth Biosecurity Act, and as a minimum, would address the following:

- equipment used during construction would meet the national and South Australian standards for biofouling management
- all vessels using the facility would be required to comply with the policies and guidelines relevant to the management of ballast water disposal
- all vessels using the facility would be required to comply with state policies relevant to the management of biofouling and pollution prevention
- additional baseline marine surveys would be undertaken in the marine study area to establish a robust baseline detailing the presence of existing pest species
- ongoing monitoring would be undertaken to detect new marine pest species, allowing for an early response
- the plan would be continually reviewed to ensure any new marine pests or aquatic diseases are incorporated into the monitoring program
- particular attention would be paid to risks associated with the potential introduction of abalone-related diseases to Smith Bay, including potentially refusing ships from ports where there are known abalone diseases (to be implemented under the port operating agreement)
- the presence of marine pests, including suspected pests, would be reported immediately to the relevant authorities
- any cases of suspected abalone diseases or Pacific Oyster Mortality Syndrome that could be present in feral oyster populations would be reported immediately to the relevant authority

[54] EIS Chapter 15, p343

- assistance where appropriate would be provided to the relevant authorities in the event of an emergency
- practical response plans and strategies for the control of key pest species would be developed and implemented (as required) in consultation with PIRSA (including SARDI), KI NRMB (now KILB), Biosecurity SA, and the Commonwealth DAWE[55] [56].

The proponent also committed to include specific measures in the Operational Environmental Management Plan that would reduce the risk of marine pests from ballast water being introduced into Smith Bay, including:

- the barge/pontoon would complete vessel pre-arrival reporting using the Maritime Arrivals Reporting System administered by the Commonwealth. The vessel would also comply with all directives issued by Commonwealth relating to biosecurity during any inspections
- timber products exported from Smith Bay to north Asia would be shipped on a relatively small number of vessels
- other than in exceptional circumstances, vessels would discharge foreign-sourced ballast water further than 200 nautical miles from the Australian shoreline before entering the Australian EEZ to conform with the Biosecurity Act[57].

The proponent also committed to include specific measures in the Operational Environmental Management Plan that would reduce the risk of marine pests and aquatic diseases from biofouling being introduced into Smith Bay, including:

- the barge/pontoon (purchased in Korea) will be sandblasted and repainted with anti-fouling paint and inspected by Australian engineers before arrival at Smith Bay
- the use of anti-fouling paints, including any cleaning of vessels' hulls, would comply with Commonwealth and South Australian pollution requirements
- no in-water or dry dock cleaning would be permitted at the proposed seaport
- the Port Management Officer (appointed under the Port Operating Agreement) would review biofouling records for incoming vessels
- shipping operators would be required to:
    - implement a Biofouling Management Plan and maintain records
    - provide evidence of independent hull inspections and ongoing maintenance
    - provide current antifouling certificates
    - provide operational history for the vessel
    - provide details and reports from dry docking[58].

Additional pest management measures proposed by the proponent include:

- no abalone or oyster products would be allowed to enter the study area via Freeoak Road or via the port facility
- induction sessions for construction and operational staff would include a component on aquatic diseases, including abalone and oyster diseases
- marine surveillance equipment (boats and diving equipment) used during construction and/or operation would be decontaminated in accordance with standard industry protocols[59].

[55] EIS Chapter 15, p344

[56] on 1 February 2020 became Department of Agriculture, Water and the Environment (DAWE)

[57] EIS Chapter 15, p345

[58] EIS Chapter 15, p341 and 345

[59] Chapter 15, p345

Proposed monitoring measures outlined in the EIS include:

- regular surveys of infrastructure and surrounding sediments associated with the proposal to detect any new pest species
- auditing of ballast water management plans by the Director of Biosecurity
- auditing of biofouling management plans during construction/operation by the Port Management Officer
- review of the marine biosecurity response procedure (OEMP)
- review of effectiveness of management measures
- review of training records.

Table 15-3 of the EIS outlined in detail all proposed environmental management measures for marine biosecurity risk. It is noted that with the revised design, the proposed management measures that relate to dredging are obsolete (these are outlined in Table 4-1 of the 1st Addendum).

Due to its unique natural environment, everything that arrives on Kangaroo Island poses some level of biosecurity risk, and as such, a separate *Biosecurity Strategy for Kangaroo Island (2017)* was developed by the KI NRMB to provide a more local focus for the control and management of pests. In its submission, the KI NRMB advised it was very concerned with marine biosecurity risk associated with shipping although it acknowledged that such activity is highly regulated and prescribed.

The KI NRMB raised particular concern regarding the ballast water exchange within the Same Risk Area at Port Adelaide due to its known presence of aquatic diseases. The KI NRMB requested to be consulted on the development of the Marine Pest Management Plan for the proposal and was supportive of the Biosecurity Advisory Committee, a sub-committee of the board, being used during the development of the Biosecurity Management Plan.

PIRSA outlined that the development is not without risks and emphasised the importance that the proponent develop and implement a Marine Pest Management Plan and a Biosecurity Management Plan that contain mitigation measures as described in the EIS. These plans are to be developed in consultation with PIRSA and the KI NRMB (now KILB), as a minimum, and must include mitigation measures and controls related to ballast water exchange, cleaning and biofouling mitigation measures.

The State Planning Commission requested further information including the preparation of a Marine Pest Management Plan containing measures to address the risk of aquatic pest and disease transfer from Port Adelaide and biofouling management plans for each vessel or barge used (including tugs) during construction and operation of the facility.

In response, the proponent's 2nd Addendum contained the following plans:

- draft Biosecurity Management Plan
- draft Marine Pest Management Plan – Construction
- draft Marine Pest Management Plan – Operations
- example Biofouling Management Plan

These plans were prepared in consultation with PIRSA. The plans provided were comprehensive drafts that focused on the management principles that will underpin the final biosecurity management plans should the proposal be approved. The proponent committed that the final plans will be prepared in

consultation with PIRSA, the Kangaroo Island Landscape Board, the South Australian Research and Development Institute (SARDI) and DAWE[60].

Both the draft Marine Pest Management Plans contained the commitment of no ballast water uptake from Port Adelaide[61] and no in-water cleaning of vessels on Kangaroo Island[62].

PIRSA noted that the plans are draft and would need to be finalised and contain more detail in regard to the ongoing monitoring and surveillance should approval be provided. PIRSA also advised that an external review of the plans would be expected to meet ISO standards and would provide additional assurance as to the ongoing commitment of individuals and the organisation to the activities outlined in the plans.

DEW advised that further definition of ballast water uptake and exchange is required during the preparation of final plans. DEW requested that the National Parks and Wildlife Service SA also be consulted during the preparation of the plans, should approval be granted.

The proponent responded that a detailed monitoring plan would be prepared after development approval is provided and concurred that external third party review would be beneficial and would be considered.

PIRSA advised that the draft vessel Biofouling Management Plan was an acceptable example that could be adopted for all vessels used. PIRSA advised that it is the final decision maker on the required bio-fouling management of vessels and vessel entries to Kangaroo Island and that all costs associated with undertaking any recommended biofouling management actions and associated cleaning and/or inspection costs lies with the proponent / vessel operator.

Based upon advice received from relevant agencies, it is considered that all of the proposed mitigation measures outlined and committed to by the proponent are adequate and can be incorporated into the relevant Marine Pest Management Plans, Biosecurity Management Plan, and the Construction and Operational Environmental Management Plans. These plans must include monitoring and surveillance measures. Implementation and ongoing review of these plans will be of critical importance.

The development of a port facility that accommodates international ships on Kangaroo Island poses a risk to the biosecurity of the island. In particular the use of the 'same risk' area for ballast water exchange for domestic shipping poses a significant biosecurity risk given the disease-free nature of the waters of Smith Bay in comparison to the waters of the 'same risk' area in and around Port Adelaide which contains a number of established marine pests.

The Australian Government has exclusive responsibility for the regulation of the biosecurity risk posed by ballast water and all international and domestic vessels using the facility must comply with the Commonwealth *Biosecurity Act 2015*. However, given the waters of Smith Bay support an abalone facility that is reliant on a disease-free environment, it is critical that the proponent work in collaboration with the Commonwealth and state agencies in relation to overall biosecurity risk and management.

[60] Second Addendum, section 3.2, p17

[61] Second Addendum, Appendix B2, section 4.3.3 and Appendix B3, section 4.2.3

[62] Second Addendum, Appendix B2, section 4.3.4 and B3, section 4.2.4

The AR concludes that with careful and correct management and application of recognised mitigation measures, the risks to marine biosecurity can be minimised, although not eliminated, through the development and implementation of a suite of management plans, including:

- **a Marine Pest Management Plan (prepared in consultation with Primary Industries and Regions SA and the Kangaroo Island Landscape Board)**
- **a Biosecurity Management Plan (prepared in consultation with Commonwealth Department of Agriculture, Water and the Environment; Primary Industries and Regions SA; and the Kangaroo Island Landscape Board)**

These plans should include appropriate measures to minimise the risk of aquatic pest and disease transfer (including a commitment to not exchange or uptake ballast water from Port Adelaide) and biofouling, and include ongoing monitoring measures.
Third party review of these plans is recommended to meet ISO standards and provide additional assurance as to the ongoing commitment of individuals and the organisation to the activities outlined in the plans.

Due to the critical nature of the potential marine biosecurity impacts associated with this proposal, both the Marine Pest Management Plan and the Biosecurity Management Plan are recommended as Referred Matters that must be prepared and approved prior to the provision of any full development authorisation.

The above plans, along with those listed below, should apply to all vessels using or servicing the proposed facility (including tug boats):

- **Construction Environmental Management Plan, prepared in consultation with relevant government agencies**
- **Operational Environmental Management Plan, prepared in consultation with relevant government agencies.**

5.4.3.2 Terrestrial

Weed infestations are acknowledged as a key threat for many threatened flora species and fauna habitats. The EIS identified that the project site is dominated by weeds and overall the vegetation of the site is degraded (discussed in detail at section 5.4.4.3).

The EIS identified that the pathogen phytophthora (a soil-borne fungus that attacks the roots of plants and can cause significant plant death) is not present at the site, however has been recorded in the local area, and that the project site is considered a moderate risk area for the pathogen[63]. Phytophthora may be introduced through contaminated soil on vehicles, construction equipment and landscaping materials (including plants). The EIS identified that the risk of introduction of phytophthora would be highest during the construction period. This risk can be managed through the use of standard hygiene protocols contained in the Construction Environmental Management Plan[64].

The EIS stated that given the cleared and degraded nature of the project area and the introduction and spread of weeds would be unlikely to cause impacts on native flora or fauna on the site, however it could have the potential to spread offsite without appropriate controls. The draft Construction Environmental Management Plan contained proposed controls including: training and induction

[63] EIS Chapter 15, p331
[64] EIS Chapter 15, p333

programs; signage; sourcing equipment and landscaping products (including seed and tube stock plants) locally where possible; and implementing vehicle inspections and hygiene measures[65].

No introduced fauna species have been recorded within the project site, however the EIS recognised that a number of species such as feral cats, rats and mice are likely to frequent the project site at times[66] as these species are common across the island.

Rodents are frequent stowaways on ships, with the Pacific rat identified as a pest alert species for South Australia[67]. Invasive ants from international sea freight is also a risk, and are identified on the National Plant Pest Priority List[68]. Although Smith Bay is not currently proposed to be a First Point of Entry port, visual inspections will still be required to detect any pest species that may remain on the ship.

The Construction Environmental Management Plan and Operational Environmental Management Plan should include waste management practices to deter scavenging fauna being attracted to the project site.

To reduce transference risk of terrestrial pest species or pathogens into Smith Bay during docking, it is recommended that the Operational Environmental Management Plan include measures that prohibit incoming crew movements, any plant material or wastes from being taken from all incoming vessels along with visual inspections of incoming vessels to identify any pests prior to docking.

The EIS identified that in the event of vessel damage, to decrease risk of pest transference, equipment and/or technical staff would be transferred to the vessel and not onto the island[69].

The EIS outlined that if an Emergency Plant Pest (i.e. a pest or disease of such concern that they are considered a national threat declared under the *Plant Health Act 2009*) or suspected Emergency Plant Pest was detected at the project site, relevant authorities would be notified. The EIS outlined that operators at the site would be trained in this procedure as part of their induction training for both the construction and operation of the facility. Incident response procedures are outlined in the draft Operational Environmental Management Plan[70].

Importation of honey, apiary products and unwashed potatoes is banned on the island and compulsory induction training about this will be given to all personnel, including incoming crews[71]. This risk is considered low due to limited number of vessels using the facility, however the risk remains should crew go ashore with any of these banned substances.

Table 15-1 of the EIS outlined in more detail, all proposed environmental management measures for terrestrial biosecurity risk.

No specific agency concerns were raised in relation to terrestrial biosecurity, notwithstanding this is a genuine and significant risk, however it is considered that this risk can be adequately managed through the implementation of appropriate environmental management plans prepared in consultation with the relevant government agencies.

[65] EIS Chapter 15, p333, EIS Appendix U1, Table 1-5

[66] EIS Chapter 15, p 331

[67] PIRSA

[68] Department of Agriculture and Water Resources

[69] EIS Chapter 15, p335

[70] EIS Chapter 15, p334

[71] EIS Appendix U2, Table 1-5

The AR concludes that with careful and correct management and use of mitigation measures, the risks to terrestrial biosecurity can be effectively managed through the development and implementation of a suite of management plans, including:

- **a Biosecurity Management Plan prepared in consultation with Commonwealth Department of Agriculture, Water and the Environment; Primary Industries and Regions SA and the Kangaroo Island Landscape Board**
- **Construction Environmental Management Plan prepared in consultation with relevant government agencies.**
- **Operational Environmental Management Plan prepared in consultation with relevant government agencies.**

5.4.4 Flora and Fauna (including Matters of National Environmental Significance)

***Environment Protection and Biodiversity Conservation Act 1999* - Matters of National Environmental Significance - Guideline 1:** The Commonwealth Minister for the Environment has determined (EPBC no.2016/7814) that the proposed action is likely to, or may have, a significant impact on the following controlling provisions (matters of national environmental significance (MNES)):

- Listed threatened species and communities (sections 18 and 18A) including but not limited to:
  - the endangered and migratory Southern right whale (*Eubalaena australis*)
  - the endangered Kangaroo Island echidna (*Tachyglossus aculeatus multiaculeatus*)
  - the vulnerable Hooded plover (eastern) (*Thinornis rubricollis rubricollis*)
  - the Southern brown bandicoot (eastern) (*Isoodon obesulus obesulus*)
- Listed migratory species (sections 20 and 20A) including but not limited to:
  - the endangered and migratory Southern right whale (*Eubalaena australis)*
- Commonwealth marine areas (sections 23 and 24A) – while it is understood the action is proposed to be taken outside a Commonwealth marine area, the assessment documentation must consider if there is a real chance or possibility that the action will impact a Commonwealth marine area, for example, because the action will have a substantial adverse effect on a population of a marine species such as a cetacean including its life cycle (e.g. breeding, feeding, migration behaviours, life expectancy) and spatial distribution.

Coast and Marine - Guideline 2: As the proposed development is within, and directly adjacent to, the coastal waters of Smith Bay, there will be direct impacts to this particular environment. The ecology of the area must be investigated and understood to accurately identify the impacts from the construction and operation of the development, and to determine appropriate measures to manage, offset or mitigate these impacts. Although the area is not within a Marine Park (State), the construction and operation of the proposal, including the passageway of ships to and from the port and wharf may still have impacts on the neighbouring Marine Parks (i.e. Encounter and Southern Spencer Gulf Marine Parks).

Native Vegetation and Fauna (Marine and Terrestrial) - Guideline 9: The proposed site is in an area that is mostly cleared of native vegetation, however patches of vegetation remain, and although fragmented these may provide critical habitat for fauna. Investigation into vegetation on surrounding properties and within the adjacent marine environment should also be undertaken to determine if the proposed development and associated activities will impact upon these habitat areas and the species, including migratory species, that may be reliant upon them.

5.4.4.1 Marine Flora

EIS Chapter 12 and Appendix I, and 1st Addendum section 4.5 and Addendum Appendix C2 relate to marine ecology.

The principal marine flora issues associated with the proposal are the direct loss and indirect impacts on seagrass and other marine communities resulting from the construction of the in-water elements and shipping movements.

The north coast of Kangaroo Island, including Smith Bay is a relatively sheltered environment that has led to the development of extensive seagrass and reef communities. It is widely accepted that seagrass communities are a critical component of coastal marine ecosystems as they:

- are the primary source of productivity within the organic debris food chain
- provide for habitat diversity and ecosystem productivity
- provide critical habitat for epiphytic algae and fauna (including shrimps, slaters, sea lice, snails, crabs, pipefish, seahorses)
- support larval, juvenile and adult life stages of a number of important fish species (including commercial species)
- reduce wave action, and thus reduces erosion potential of high energy water
- trap suspended sediments.

As part of the EIS investigations, the proponent engaged SEA Pty Ltd to undertake an ecological assessment of the marine environment of Smith Bay (Appendix I1). The assessment methodology included several diving trips and camera drops to identify the dominant marine species, communities and habitats. During each dive and survey the type, approximate percentage habitat cover and identification, and approximate abundance of organisms were noted, along with the presence of any species. Table 12-1 of the EIS list all species recorded during the dive survey. No introduced species were recorded.

As part of the 1st Addendum, additional investigations were undertaken (by SEA Pty Ltd) to take into consideration the revised design and location of the pontoon.

The investigations showed that Smith Bay supports a mixture of reef and seagrass communities in the shallow section of Smith Bay (<7-8m). At the reef to 3m depth dominant species including macroalgae *Cystophora siliquosa* and *Cystophora moniliformis* with an understorey including *Osmundaria prolifera*, *Caulerpa flexis* and the red coralline *Haliptilon roseum*. Small patches of seagrass *Posidonia sinuosa* were also detected. From the 3m to 7-8m depth, areas of bare sand and dense strands of seagrass comprising *Posidonia sinuosa*, *Amphibolis antarctica* and *Posidonia coriacea* were observed[72].

The study identified that the seagrass communities are more dominant in deeper water (8-12m) with initially a dense (80 percent) cover of *Posidonia sinuosa* that progressively thins to a sparse (10-20 percent) cover at 14m, with occasional patches of *Amphibolis* sp. And *Halophilia australis*. As the water deepens, the density of the seagrass lessens until it becomes vary sparse to non-existent in the deeper water (14-17m)[73].

The 1st Addendum identified that the only benthic communities that would be directly affected during construction of the jetty would be where piles would be driven into the seafloor. Coupled with the

[72] EIS Chapter 12, p 244

[73] EIS Chapter 4, Addendum Section 4.5 p18

indirect impact of shading, the redesign will result in an estimated seagrass loss of 0.52ha (compared to approximate loss of 7.5ha with the original design).

Clearance of native vegetation, including marine vegetation, requires approval under the *Native Vegetation Act 1991* and is subject to the provision of a significant environmental benefit (SEB). The proponent proposed to make a monetary payment to the Native Vegetation Council to offset the seagrass loss[74].

The Department for Environment and Water (Native Vegetation Council) advised that the SEB offset proposal, originally outlined in the EIS, to provide a financial contribution to an existing seagrass monitoring project is not consistent with the *Native Vegetation Act 1991* requirements.

The 1st Addendum rescinded this and instead proposed payment into the fund as per the *Policy for Provision of a Significant Environmental Benefit – July 2019*. The Native Vegetation Branch of the Department for Environment and Water has advised that the quantum of the offset and the means of delivery are supported. The final SEB will be subject to endorsement by the Native Vegetation Council.

The AR concludes that the amended design has significantly reduced the impact to native vegetation in relation to disturbance of seagrass. The construction and operation of the amended design is expected to have minimal impacts on seagrasses as minimal direct clearance is required during construction, and negligible indirect clearance will result during its operation (from shading effects).

Proposed clearance of native vegetation under the *Native Vegetation Act 1991* is subject to an exemption under Part 4 of the Native Vegetation Regulations 2017 (section 27) on the provision of a significant environmental benefit offset, to the satisfaction of the Native Vegetation Council.

Any residual impacts can be effectively managed through the implementation of an Environmental Management Plan Framework, including the preparation of a Flora Management and Monitoring Plan prepared in consultation with the Department for Environment and Water.

5.4.4.2 Marine Fauna

EIS Chapter 12 and Appendix I, and 1st Addendum section 4.5 relate to marine ecology.
EIS Chapter 14 and Appendix K, and Addendum section 4.6 relate to Matters of National Environmental Significance.

The EIS identified that forty-six (46) listed threatened or listed marine migratory species have been recorded within 10km of Smith Bay, including:

- 8 threatened (endangered or vulnerable) marine species, which comprise mainly whales and turtles
- 32 nationally listed marine species, which include 3 seal species, 3 turtles and 26 syngnathid species (seahorses and pipefish)
- 12 species of whales or dolphins
- 12 migratory marine species.

The nationally threatened species include the Southern right whale (*Eubalaena australis*), humpback whale (*Megaptera novaeangliae*), blue whale (*Balaenoptera musculus*), Australian sea-lion (*Neophoca cinerea*), great white shark (*Carcharodon carcharias*), loggerhead turtle (*Caretta caretta*), leatherback turtle (*Dermochelys coriacea*) and green turtle (*Chelonia mydas*).

[74] First Addendum, Section 4.5.3, p 19

State-listed marine species potentially occurring in the area include the pygmy right whale (*Caperea marginate*), pygmy sperm whale (*Kogia breviceps*), dusky dolphin (*Lagenorhynchus obscurus*) and strap-toothed whale (*Mesoplodon layardii*), all of which are listed as rare[75].

The EIS identified that 5 marine fauna, one shark and 15 species of pipefish are likely to occur, or may possibly occur at times, within Smith Bay[76]. The EIS also identified that 22 of the listed species have been recorded around Kangaroo Island on rare occasions, and that none of the listed species have habitat along the north Coast of Kangaroo Island[77]. As a consequence, the likelihood of many of these species being in Smith Bay during the time of construction is low.

Twenty-two of the listed marine species are highly mobile and can move from the disturbed areas to adjacent unaffected habitat. Less mobile species, including seahorses and pipefish, would be more vulnerable during the development.

The EIS identified that the great white shark (*Carcharodon carcharias*), common dolphin (*Delphinus delphis*), Indian Ocean bottle-nose dolphin (*Tursiops aduncus*), long-nosed fur seal (*Arctocephalus forsteri*) and Australian sea-lion (*Neophoca cinerea*) are all likely to traverse and/or be present in Smith Bay at times as they forage along the north coast. The EIS indicated that there is no evidence to suggest that Smith Bay has important or critical feeding, breeding or nursery habitat for any of these species[78].

Many submissions outlined concern for potential impacts upon marine fauna, in particular dolphins and whales, with many submissions referring to regular sightings within Smith Bay. It is noted that these sighting are unrecorded (i.e. not official records) however the presence of these species in these waters is recognised.

Appendix I of the EIS contained a detailed risk assessment for all identified marine species and concluded that neither the construction nor operation of the wharf would result in significant fragmentation or reduction in the size of the populations of any of the listed species, affect any areas of critical habitat or disrupt breeding cycles.

The amended design, as outlined in the 1st Addendum, will result in significantly less seagrass clearance - 0.52 ha in comparison to the original design and dredge which would require 7.5 ha of seagrass to be cleared. The direct loss of seagrass will have an impact on marine fauna (in particular pipefish) that rely on seagrass for habitat and breeding, and are known to inhabit the Smith Bay seagrass communities. As the loss of seagrass has been minimised, and it represents a very small portion of pipefish habitat along the north coast of Kangaroo Island, it is expected that this loss will have a negligible impact on pipefish populations in the region and Smith Bay.

Underwater noise and vibration associated with the construction of the wharf and associated shipping operations may impact upon marine fauna through hearing damage or changes to migration patterns or social behaviours. The EIS identified that piling activities (during construction) may cause permanent hearing and organ damage to great white sharks within 6m of piling operations and temporary hearing damage within 680m; turtles within 100m (both temporary and permanent

[75] EIS Chapter 12, p 244

[76] EIS Table 12-2

[77] EIS Chapter 12, p 246

[78] EIS Chapter 12, p249

hearing damage) and 20m for organ damage; and seals/sea lions within 110m (temporary hearing damage)[79].

The EIS outlined management measures and a commitment that 'should a great white shark, dolphin, seal or sea-lion approach within 500 metres of the site, construction operations at the wharf would cease'[80]. In addition, the EIS also identified that 'should a Southern right whale approach within 1km of the construction site, construction operations at the wharf would cease'[81].

The EIS and 1st Addendum committed to the following management measures to mitigate the impacts of pile driving on marine fauna[82]:

- using a soft start approach – piling energy impact would be gradually increased over a 10-minute period
- establishing a 1km shut-down zone around the site (with all pile driving activity to stop if marine fauna was sighted in the zone)
- monitoring the shut-down zone, with an additional buffer area, by marine fauna observers
- no pile driving at night.

In its submission, the KI NRMB requested further information on the soft start approach, in particular the exact time of the gradual increase and stated a preference for 10 minutes. In its response, the proponent noted the KI NRMB's preference for a 10 min soft start and advised that specific details related to the soft start approach for piling works are yet to be finalised, however will be included in a Construction Environmental Management Plan, which would be prepared in consultation with relevant government agencies.

It is anticipated that impacts will be temporary in nature, with the longest period of impact during the construction period of 12-15 months. During the operational phase, the number of vessel calls associated with the proposal is expected to be 10-20 per annum, which is considered negligible.

As Smith Bay is not an essential habitat, breeding or nursery area for any of the listed species, and with low recorded numbers of sightings, it is expected that impacts on marine fauna will be minimal. In addition, the highly mobile affected species, in particular the threatened Southern right whale, humpback whale, Australian sea-lion, great white shark, green turtle and various species of dolphins, would naturally move away from any nuisance noise source, which would also reduce the risk of ship-strike during operation. Although behavioural changes (i.e. avoidance) are expected, these are likely to be temporary in nature and are not considered to have any significant long-term impacts on the species.

It is expected that the potential impacts can be managed or minimised through the development and implementation of appropriate environmental management plans, including a Fauna Management and Monitoring Plan, and adherence to Codes of Practices and Standards. The *South Australian Underwater Piling Noise Guidelines (2012)* includes requirements for observation zone and shutdown distances for low, mid and high-frequency cetaceans. These distances must be adhered to and any such management plan must be consistent with these Guidelines.

The AR concludes that impacts on marine fauna will be minimal and temporary in nature. With correct management and mitigation measures, the risks to marine fauna can be effectively managed

[79] EIS Chapter 12, p255

[80] EIS Chapter 12, p249

[81] EIS Chapter 12, p248

[82] EIS Chapter 12, p255 and Addendum Section 4.8, p22

through the implementation of an Environmental Management Plan Framework, including the preparation of a Fauna Management and Monitoring Plan (prepared in consultation with the relevant agencies). The Fauna Management and Monitoring Plan should identify measures to avoid and mitigate impacts from the project's activities, in particular underwater noise and vessel strike on dolphins, and include measures to monitor and report vessel strike events. Any such reporting should be made publicly available.

Southern right whales (*Eubalaena australis*)

It is noted the potential impact on the Southern right whale was a key reason for the proposal being deemed a 'controlled action' under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Smith Bay is not recorded as an important site for Southern right whales. The EIS identified that of the 'more than 400 sightings from Kangaroo Island included in the Atlas of Living Australia, none were from Smith Bay' and that 'Of the 110 sightings from Kangaroo Island recorded by the South Australian Whale Centre at Victor Harbor, 16 were from the north coast and only one was from Smith Bay'[83]. However anecdotal evidence was provided during the consultation periods and as such it is recognised that Southern right whales are an occasional visitor to the Smith Bay area during their annual migration (April – November) and that the whales (often mothers with calves) may venture into the sheltered waters of Smith Bay and use it as a resting area on their way to their breeding and calving grounds.

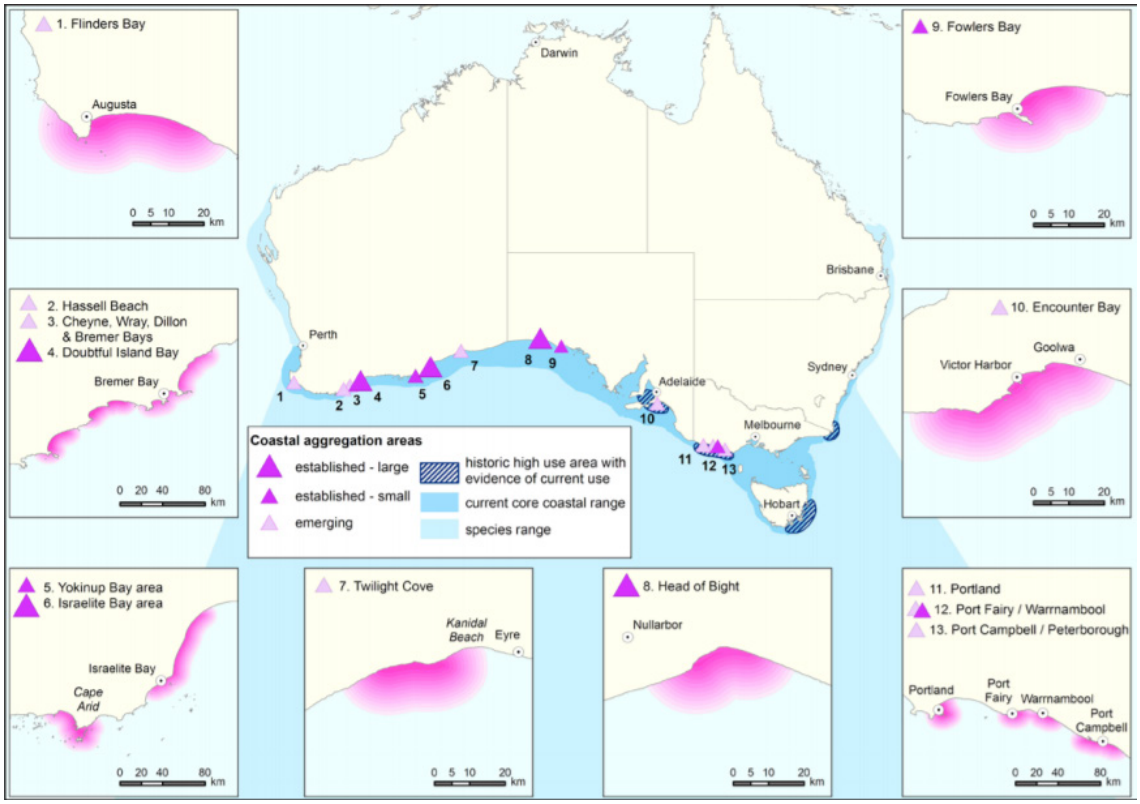


Figure 19: **Coastal aggregation areas for Southern right whales** (Conservation Management Plan for the Southern Right Whale: A Recovery Plan under the *Environment Protection and Biodiversity Conservation Act 1999* 2011–2021)

A key issue during construction is the impact of noise, especially during the pile driving of the jetty.

[83] EIS Chapter 12, p247

The 1st Addendum included a revised impact assessment in relation to noise from piling, based upon the installation of one pile at a time, but with the possibility of piling in two locations simultaneously. The Addendum identified that piling in two locations simultaneously would effectively double the number of blows per minute per day which would have the effect of increasing the cumulative sound exposure level (SEL) by 3dB, and increasing the 'threshold distances' for temporary threshold shift (TTS) and permanent threshold shift (PTS) onset.

Assumptions for the construction of the extended jetty are consistent with that used for the original modelling – piling activity noise would occur for a period of up to 20 minutes per pile installed, with up to two piles being installed per day (if using only one piling rig at a time).

The EIS, and 1st Addendum identified that piling activities (during construction) may cause permanent hearing damage to Southern right whales within 900m of piling operations and temporary hearing damage within 6.5km. However, the impact of piling construction noise on these whales is considered low as their frequency of visiting Smith Bay is low. Additionally, as Southern right whales are highly mobile, it is likely that they would avoid Smith Bay if they were to detect or be disturbed by, noise associated with pile driving, and/or general construction and operational activities. Other rest areas are available to the whales along the north coast of Kangaroo Island.

The EIS detailed mitigation measures that would be adopted to avoid or mitigate impacts and risks to Southern right whales from underwater noise during construction and operation, including observer monitoring with shutdowns, soft-start procedures, only piling in conditions of good visibility, and using lower impact piling methods where necessary[84].

As detailed previously, the EIS committed to a range of management and mitigation measures to mitigate the impacts of pile driving on all marine fauna including soft start, use of marine fauna observers, shut-down zone(s) and no pile driving at night[85]:

The Commonwealth Department of Agriculture, Water and the Environment advised that a larger shut-down zone (i.e. more than 1km) may be warranted subject to sound exposure levels, in particular if pile driving occurs in two locations simultaneously. The Department advised that if approved, this can be further explored during the preparation of a Southern Right Whale Management and Monitoring Plan (discussed in more detail below).

A key issue associated with the berthing and movement of ships into and out of Smith Bay is the risk of collision with whales. Collisions between cetaceans and all vessels have the potential to occur wherever there is an overlap between cetacean and boating activities.

The *Conservation Management Plan for the Southern Right Whale 2011-2021 (*SEWPaC 2012) identified the risk from vessel disturbance as a known threat to the species.

The proposal will result in an increase in shipping activity and vessel movements to, from and within Smith Bay, which could potentially increase the risk of whale strike or avoidance of noise sources. The low numbers of whales observed in Smith Bay and surrounds, along with the relatively low incidence of reported ship strike, suggests that the risk to whales is low (even in the context of increasing ship movements).

[84] EIS Chapter 12, p248

[85] EIS Chapter 12, p255

The EIS contained an assessment of the development against the MNES Significant Impact Criteria (Table 14-4) and concluded that there would be no residual significant impacts to the Southern right whale as a result of the proposal.

In its submission the Commonwealth Department of Agriculture, Water and the Environment raised concern about the potential impacts of the proposed action on Southern right whales, particularly during the calving season, and that facilitative impacts from additional third party vessel movements may add to this impact and should be considered by the proponent.

In its response, the proponent advised that the model used to predict vessel strike assumed that whales will always be on the surface and that they will take no evasive action when a ship is in the vicinity, and that based on up to 20 shipping movements per year, the expected rate of vessel strike will be one in every 300 years. The proponent reiterated that the likelihood of vessel strike in the vicinity of Smith Bay would also be very small as vessels will approach and leave the wharf at low speeds (2-3 knots) and the operational vessel noise in the bay will be infrequent and of relatively short duration during docking operations and minor while ships are actually docked.

The proponent also stated that 'whilst there has been a decline in the south eastern population of the Southern right whale in recent years, the south western population is increasing at the maximum possible rate, despite there being many busy shipping ports along the coast of Western Australia' and as such concluded that 'there is no evidence to suggest that ports or shipping are implicated in the recent decline of the south eastern population of the southern right whale.'

In relation to facilitative impacts from additional third party vessel movements, the proponent advised that any future use of the facility by third parties will require separate approvals, in which the cumulative impacts of the existing and proposed operations would need to be assessed, and that it is not possible at this time to determine who future third party users may be, what they may use the facility for, or the potential volume of ship movements associated with any such use.

If approved, the Department of Agriculture, Water and The Environment requires that a Southern Right Whale Management and Monitoring Plan be prepared and implemented. That plan should include:

- A description of all threats to the Southern right whale arising from port construction and operation activities (including appropriate mapping)
- A plan to monitor whale habitat use and behaviour using appropriate survey techniques for mapping potential threats to whales arising from port construction and operation activities
- Mitigation measures to manage the impact of port construction and operation (including shipping), especially underwater noise caused by the port and vessels and the risk of vessel strike
- Consideration and management of cumulative impacts arising from port construction and operational activities
- Management of noise impacts such that underwater noise does not exceed 183dB re 1µPa2.s.

The Plan should identify all sources of underwater noise that would be produced and measures to minimise these. During construction, marine piling activities should minimise the risk of physical impacts, including temporary threshold shift to whales (i.e. reversible hearing loss). These must include:

<u>Pre-start up visual observations</u>

- Visual observations for whales undertaken to the extent of the marine piling observation zone (i.e. up to 1,250m) by a suitably trained crew member for at least 30 minutes before the commencement of marine piling.

Operating procedures

- Visual observations of the piling observation zone.
- Exclusion zones to ensure that whales are not exposed to Sound Exposure Levels (SEL) of greater than or equal to 183dB re 1µPa2.s and be no less than a 1,250m horizontal radius for whales, unless a lesser exclusion zone has been determined from noise monitoring of piling and has a SEL equal to or below 183dB re 1µPa2.s.
- If whales are sighted within the relevant exclusion zone, action to cease all piling within the relevant exclusion zone should be taken within two minutes of the sighting or as soon as possible if it is unsafe to cease piling within this time.
- Piling activities must not recommence until whales are observed to move outside the exclusion zone or 30 minutes have passed since the last sighting.
- Piling activities must be initiated at the soft start level and then build up to full operating impact force. The soft start procedures should only commence if no whales have been sighted in the exclusion zone during pre-start-up visual observations.
- No marine piling operations should occur between the hours of sunset and sunrise during the peak southern migration of mother and calf whale pods (April-November).
- With the exception of the above, marine piling commenced prior to sunset or prior to a period of low visibility (i.e. inability to see for a distance of 500m or more due to fog, rain, sea spray or smoke) can continue between the hours of sunset and sunrise unless marine pile driving is suspended for more than 15 minutes.

The plan would need to be incorporated into the Environmental Management Plans for construction and operation.

The Department advised that the proposed observation zone and shutdown distances outlined in the EIS are different than those required by the Commonwealth. However, this is a minor issue that can be rectified during the preparation of the required Southern Right Whale Management and Monitoring Plan.

Based upon advice from the Commonwealth Department of Agriculture, Water and the Environment, it is concluded that the construction and operation of the proposal is likely to have negligible effects on the Southern right whale. Subject to review of observation zone and shutdown distances, the Southern right whale management and mitigation procedures outlined in the EIS are considered suitable.

The AR concludes that impacts on the Southern right whale would be low and temporary in nature. With correct management and mitigation measures, the risks to Southern right whales can be adequately managed through the implementation of an Environmental Management Plan Framework, including the preparation of a Southern Right Whale Management and Monitoring Plan prepared in consultation with, and to the satisfaction of, the Commonwealth Minister for the Environment.

This plan must outline appropriate methodology to monitor whale habitat use and behaviour; identify impacts on the Southern right whale during construction and operation of the proposal; and include details on pre-start up and start procedures and exclusion zones. The Plan must also identify measures to avoid and mitigate impacts from the project's activities, in particular underwater noise and vessel strike, and include measures to monitor and report vessel strike events. The timing of reports and reviews are at the discretion of the Commonwealth; however it is

recommended that reporting be made publicly available. If approved this requirement is recommended as a condition.

5.4.4.3 Terrestrial Flora

EIS Chapter 13 and Appendix J relate to terrestrial ecology.

As part of the EIS investigations the proponent engaged EBS Ecology (who are endorsed by the South Australia Native Vegetation Council as an accredited consultant) to undertake an ecological assessment of the terrestrial environment (Appendix J). This included an on-ground terrestrial flora survey (traversed by foot), which included recording flora species, vegetation associations and scattered trees, vegetation condition, location of threatened flora species and identifying areas of weed infestations.

The subject site is not within or close to any Conservation Parks. There are no Heritage Agreements within the study area and no protected areas or wetlands of national significance within or close to the site.

The EBS Ecology Smith Bay Ecological Assessment identified that the subject site has been cleared almost entirely of native vegetation for previous agricultural and industrial use and now supports limited flora whose habitat value is considered low. Most of the vegetation on the subject site is comprised of exotic grassland/herb land with only small remnant patches of native vegetation – mainly coastal mallee (*Eucalyptus diversifolia*) and common boobialla (*Myoporum insulare*) – remaining on the dunes along the foreshore and within the coastal reserve[86].

Five vegetation associations were recorded within the project area with combined total area of 15.28 hectares. None of the associations have conservation status under the *Native Vegetation Act 1991*. The condition of the vegetation was identified to be mostly very poor, with only 1.44 hectares of vegetation considered to be in moderate condition.

ID	Vegetation association	Condition	Area (ha)
1	Exotic grassland/herbland (grazing pasture paddock)	Very poor	11.95
2	Ruby saltbush (*Enchylaena tomentosa*) low open shrubland	Very poor	1.49
3	Planted *Eucalyptus* spp./planted garden species	Very poor	0.41
4	Coastal white mallee (*Eucalyptus diversifolia*), common boobialla (*Myoporum insulare*), low open woodland	Moderate	0.96
5	Kangaroo Island narrow-leaved mallee (*Eucalyptus cneorifolia*), tall open forest	Moderate	0.48
		Total	**15.28**

Figure 20: Vegetation associations within the project area (EIS Table 13-2)

Two vegetation associations were recorded beyond the southern boundary of the subject site with a total combined area of 5.38 hectares, including a patch of Kangaroo Island narrow-leaved mallee (*Eucalyptus cneorifolia*). This species, where meeting a minimum patch width of 60m, is listed as a nationally threatened ecological community under the Commonwealth EPBC Act. The patch adjacent the subject site meets this threshold. A smaller patch of this species grows beside Freeoak Road

[86] EIS Chapter 13, p265 / Appendix J2

outside the subject site however it does not meet the threshold to be considered a protected ecological community. No threatened ecological communities were recorded on the subject site[87].

As the patch of Kangaroo Island narrow-leaved mallee is not within the subject site, the proposal will not have a direct impact on this ecological community and is unlikely to have an indirect impact.

ID	Vegetation association	Vegetation condition score	Unit biodiversity score	Area (ha)	Total biodiversity score
6	Kangaroo Island narrow-leaved mallee (*Eucalyptus cneorifolia*), woodland	19.25	29.38	4.75	139.53
7	Sugar gum (*Eucalyptus cladocalyx* ssp. *crassa*) woodland	17.55	21.04	0.63	13.47
	Total			**5.38**	

Figure 21: Vegetation associations immediately south of project area (EIS Table 13-3)

[87] EIS Chapter 12, p267

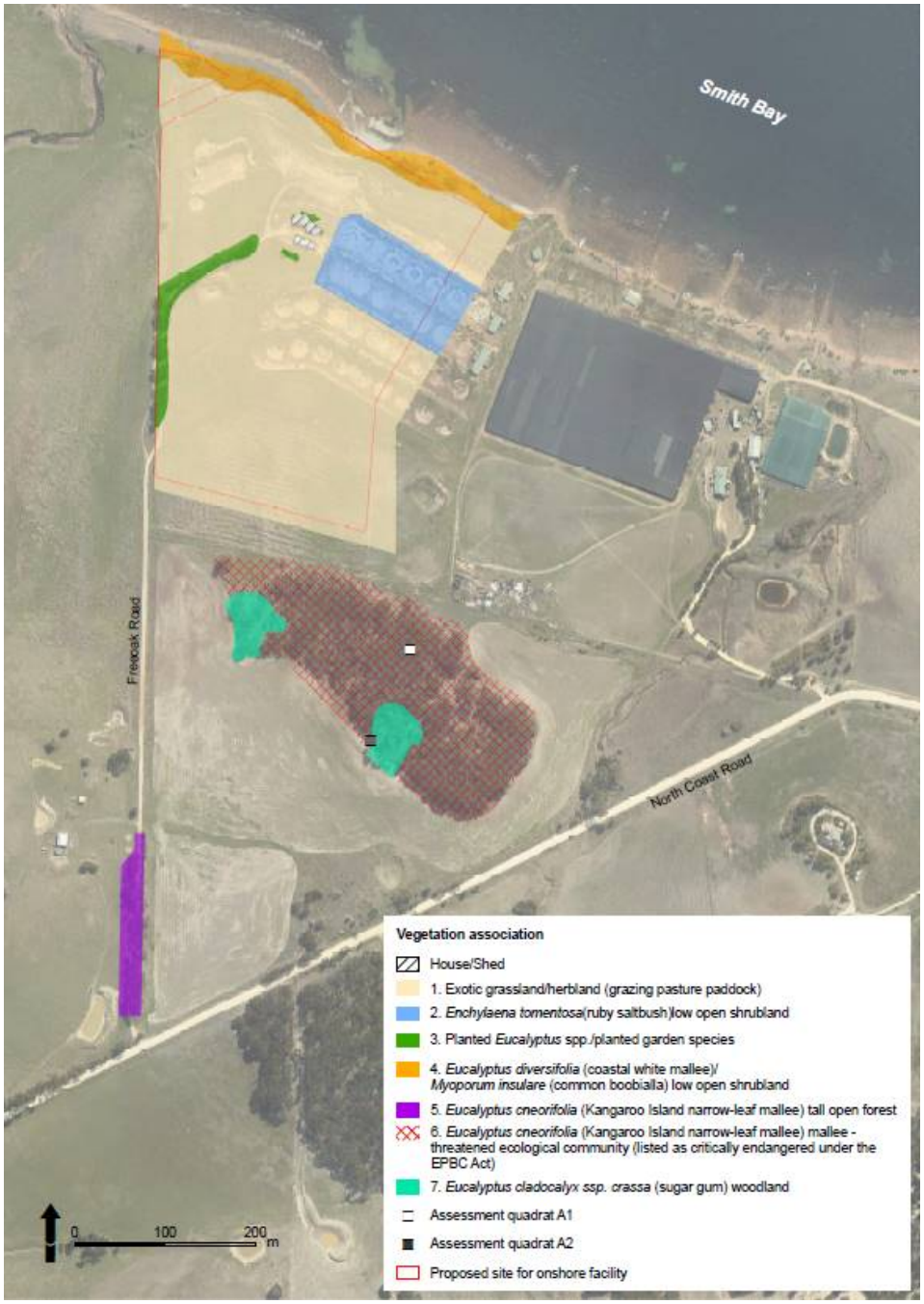


Figure 22: Vegetation associations on and adjacent the subject site (EIS Figure 13-3)

The EBS study identified 30 individual flora species within the subject site. Nineteen of these are exotic species and/or weeds and 11 are native species. Of the 19 exotic/weed species recorded, 4 are listed as declared under the *Natural Resources Management Act 2004* (African boxthorn, bridal creeper, horehound and soursob). Bridal creeper is also a Weed of National Significance. No threatened species (nationally or state-listed) were recorded on the site at the time of the survey.

Overall, the EBS study concluded that the subject site was dominated by weed species and that the vegetation was mostly degraded in nature.

Key issues associated with the proposal in relation to native vegetation include native vegetation clearance and bushfire risk. Potential impacts related to the introduction of pest species is discussed in detail at section 5.4.3.

The listed declared species will require ongoing on-site management. This can be satisfactorily managed through the implementation of an Environmental Management Plan Framework including the preparation of a Flora Management and Monitoring Plan.

The proponent proposes to clear 2.93 hectares of terrestrial native vegetation. Clearance of native vegetation requires approval under the *Native Vegetation Act 1991* and is subject to the provision of a significant environmental benefit (SEB). The EIS identified that the vegetation to be cleared had been determined to be of very poor to moderate condition. The Department for Environment and Water questioned the methodology used for this calculation.

The proponent responded that the remnant vegetation clearance was calculated based upon the Native Vegetation Council's *Guidelines for a Native Vegetation Significant Environmental Benefit Interim Policy* (2005) and the G*uidelines for a Native Vegetation Significant Environmental Benefit Policy for the clearance of native vegetation associated with the minerals and petroleum industry* (September 2005). The proponent advised that these documents were used as at the time of the survey (August 2016) no other guidelines were available to calculate an SEB. The proponent further advised that the Department for Environment and Water (Native Vegetation Branch) confirmed that this methodology (and not the revised methodology under the *Native Regulations 2017*) was acceptable to use for the initial field survey. The Department for Environment and Water advised that the proponent's response was acceptable.

The EIS identified that the SEB may include an on-ground SEB to protect an area of vegetation and provide fauna habitat. The EIS also committed that an on-site revegetation plan (proposing use of local sourced species) will be prepared and that vegetation to be retained within the subject site would be protected[88].

The Department for Environment and Water (Native Vegetation Branch) advised that an SEB offset associated with the proposed clearance of terrestrial native vegetation at the subject site is acceptable and must be negotiated with, and determined by, the Native Vegetation Council.

The EIS is silent on any native vegetation that may require clearance as part of any required road and intersection upgrades, including road widening, to accommodate haulage traffic. Should it be identified that native vegetation clearance is required to accommodate this, the appropriate methodology for clearance and calculation of the SEB is to be determined by the Department for Environment and Water (Native Vegetation Branch) on behalf of the Native Vegetation Council.

The Department of Agriculture, Water and the Environment advised that any future road widening or intersection upgrades are outside the scope of any approval that may be given for EPBC no.2016/7814; and that the proponent would need to consider their obligations under the Commonwealth EPBC Act for any future works and refer for assessment any action that is likely to have a significant impact on a Matter of National Environmental Significance.

As no nationally or state-listed flora species are within the subject site there would be no impact on any threatened flora species as a result of the proposed clearance.

The proponent committed to the implementation of standard hygiene practices to prevent the spread of weeds and ongoing management of declared weeds on the subject site to stop them from spreading.

[88] EIS Chapter 13, p276-277

Given the mostly cleared and degraded nature of the subject site, the proposal is unlikely to lead to any further degradation or contribute to the spread of weeds within the site. Benefits to flora, including a decrease in weeds, may be achieved through weed management activities that can be included within a Flora Management and Monitoring Plan as part of the Environmental Management Plan Framework.

The Commonwealth Department for Agriculture, Water and the Environment advised that it is satisfied with the proposed measures to address the spread of weeds as outlined in the EIS in relation to potential impacts on the adjacent threatened ecological community of Kangaroo Island narrow-leaved mallee (*Eucalyptus cneorifolia*), and that any potential concerns can be adequately addressed through the development and implementation of a Flora Management and Monitoring Plan prepared in consultation with the South Australian Department for Environment and Water.

As the site is mostly cleared of vegetation, the risk of bushfire is considered low. The EIS contained a Draft Bushfire Hazard Management Plan (Appendix U1) and if approved, a final Fire Safety and Hazard Management Plan (including bushfire) should be prepared in consultation with the Country Fire Service to address issues and risk around fire and bushfire at the subject site.

The AR concludes that the construction and operation of the proposal is likely to have minimal impacts on the terrestrial flora at the subject site as the site is mostly cleared and the remnant vegetation on site is degraded.

Potential impacts on the patch of Kangaroo Island narrow-leaved mallee, a nationally threatened ecological community under the Commonwealth EPBC Act, are considered low as it is located outside the subject site.

The management and mitigation procedures outlined in the EIS are considered reasonable.

Any residual impacts can be successfully managed and on-site vegetation may be improved through the implementation of an Environmental Management Plan Framework, including the preparation of a Flora Management and Monitoring Plan prepared in consultation with Department for Environment and Water; and a Fire Safety and Hazard Management Plan prepared in consultation with the Country Fire Service.

The identified proposed clearance of native vegetation requires approval under the *Native Vegetation Act 1991* and is subject to the provision of a significant environmental benefit to the satisfaction of the Native Vegetation Council.

5.4.4.4 Terrestrial Fauna

EIS Chapter 13 and Appendix J relate to terrestrial ecology.
EIS Chapter 14 and Appendix K, and Addendum section 4.6 relate to Matters of National Environmental Significance.

It is acknowledged that the bushfires of December 2019 / January 2020 significantly impacted the terrestrial fauna of Kangaroo Island, in particular the number of species and the habitat required for their survival. As the EIS was prepared in January 2019, the data presented in the EIS does not reflect this impact. Specific details related to the impact of these fires on species is also not known at the time of assessment, however assessment will occur based upon the data presented in the EIS acknowledging that if approved, any fauna management associated with the proposal will need to take into consideration the changed conditions on the island.

A key issue associated with the proposal is its potential impacts on local and regional fauna of significance. Threats from this type of development include habitat loss (discussed in detail in section 5.4.4), disturbance (during construction and operation) and increased road traffic.

Recognising the potential impacts of the proposal on nationally significant species, the proponent referred the action(s) to be undertaken for the proposed development to the Commonwealth Department of Agriculture, Water and the Environment[89] to determine if the proposed action(s) would impact Matters of National Environmental Significance under the EPBC Act.

The Commonwealth determined that the proposal was a 'controlled action' as a result of potential impacts on the Southern right whale (*Eubalaena australis*), Kangaroo Island echidna (*Tachyglossus aculeatus multiaculeatus)*, Hooded plover (eastern) (*Thinornis rubicollis rubicollis)* and the Southern brown bandicoot (eastern) (*Isoodon obesulus obesulus*) and required assessment.

Following consultation on the original design, the amendment to the in-water elements of the proposed development required the proponent to request a 'variation to the proposal' as described in the EPBC referral. This notification included an assessment which concluded that:

- there was no significant change to the risk profile of the development
- the character of the development as a timber export facility incorporating storage, remained unchanged
- the development would not trigger any additional Matters of National Environmental Significance.

The Commonwealth did not object to this conclusion.

Key activities associated with the proposal that are considered to have impacts on terrestrial fauna include:

- vegetation clearance (discussed in detail in section 5.4.4.3)
- direct and indirect mortality
- noise and light
- introduction of pests (predators) and diseases (discussed in detail in section 5.4.3.2).

As part of the EIS investigations, the proponent engaged EBS Ecology to undertake an ecological assessment of the terrestrial environment of the subject site and surrounding area (Appendix J). This on-ground terrestrial fauna survey included recording fauna species observed, any activity and signs of fauna, and identifying potential habitat for fauna. No dedicated fauna surveys (e.g. trapping) or night-time surveys were conducted.

The EBS Ecology Smith Bay Ecological Assessment identified that the subject site has been cleared almost entirely of native vegetation for previous agricultural and industrial use and now supports limited fauna.

As a result of this study, the EIS identified that 23 terrestrial fauna species were observed within the study area, including 18 native birds, 3) introduced birds and two (2) native mammals. Of the 23 species observed within the study area, two (2) were species of conservation significance: white bellied sea-eagle and the Kangaroo Island echidna (diggings observed). Seven (7) nocturnal fauna species were recorded within 10km of the study area and may at times inhabit the area. Twenty-two (22) nationally and/or state listed terrestrial fauna species were identified as having the potential to inhabit the study area[90]. In addition to the state-listed fauna species that could occur within the region,

[89] Formerly the Department of the Environment and Energy

[90] EIS Tables 13-5, 3-6, 13-7

four (4) terrestrial fauna species listed as threatened under the EPBC Act and fourteen (14) bird species listed as migratory and/or marine protected species were identified as potentially inhabiting or having potential habitat near the study area. The area of Smith Bay is not known as a breeding site for any of these species.

Several bird species, including the glossy-black cockatoo and the Australian fairy tern may occasionally fly over the study area to access remnant patches of vegetation or forage nearby, however the EIS identified that the study area itself is not an important or critical habitat area for these species.

Coastal raptors, including the white-bellied sea-eagle and osprey are likely to fly over while foraging along the coast, however Smith Bay does not provide habitat suitable for nesting. The EIS identified that the closest known nests are 4.1km and 12.4km respectively from Smith Bay, and as such, are unlikely to be affected by the proposal, especially as the ships will be entering and exiting Smith Bay directly, and not travelling along the northern coast of the Island.

Several marine shorebirds are also likely to forage or rest on the beach area of the site. Overall, as the wharf is expected to cover approximately 500m of the north coast, and given the north coast is approximately 100km long, the potential disruption in foraging caused during construction and operation of the proposal is considered insignificant and unlikely to impact upon any bird species that may forage or rest in the area.

The EIS identified that the common brushtail possum and heath goannas may inhabit the study area, but are unlikely to use it as important or critical habitat due to the abundance of suitable alternatives throughout the rest of the 'island.

The EIS identified that none of the terrestrial fauna species identified as possibly inhabiting the area are likely to use the site as important or critical habitat[91].

It is expected that light, noise and vibration associated with the construction and operation of the proposal may have short-term impacts on the fauna that use the subject site, however given the limited number of species using the site, and noting that none actively use the area for breeding or nesting, coupled with the mobility of these species, these impacts are considered to be low.

The EIS committed to undertake an assessment of the area, prior to the commencement of construction, to determine if any fauna requires relocation[92]. If identified the necessary permits must be obtained under the *National Parks and Wildlife Act 1972* with the relocation being undertaken by a wildlife professional.

Kangaroo Island echidna (*Tachyglossus aculeatus multiaculeatus)*

It is acknowledged that the island's echidna population was impacted by the December 2019 / January 2020 bushfires. The estimate of the remaining population is unknown at the time of writing this report. Early analysis undertaken by the Commonwealth Department of Agriculture, Water and the Environment indicate that between 50-80% of the echidnas' modelled likely or known distribution was affected[93].

[91] EIS Chapter 13, p278

[92] EIS Chapter 13, p281

[93] Response Document – Appendix A, p15

Kangaroo Island echidna management practices may change as a result of the bushfires, however this is also unknown at the time of preparing this report and cannot be pre-empted.

The assessment below is based on information prior to the bushfires.

The Kangaroo Island echidna is found only on Kangaroo Island. They are generally found in vegetated areas. They venture into open spaces to forage and seek shelter under thick bushes, in hollow logs or burrows.

In 2015 an assessment of the echidna's viability was undertaken by the Threatened Species Scientific Committee (TSSC) who noted that its prospects for survival were precarious because it was restricted to a single location – Kangaroo Island – and that breeding was not keeping up with the rate of natural and other deaths so the population continues to decline. The number of mature individuals was estimated at fewer than 5000 and the reduction in numbers approaching 30 per cent in 75 years, (three generations)[94].

As part of the EBS Ecology Smith Bay Ecological Assessment (Appendix J) no Kangaroo Island echidnas were observed during the field survey, however echidna diggings were observed along the western boundary of the site and on adjacent properties (refer Figure 25), indicating that there is likely a resident population of echidnas within the vicinity of the subject site, in particular in the remnant vegetation located approximately 500m west of the site.

The potential impact upon the Kangaroo Island echidna goes beyond the subject site boundary due to traffic to and from the site associated with the proposal. Sightings and surveys beyond the site were not undertaken for the EIS, however consideration of potential echidna strike along the entire transport route is required, and has been referenced (albeit limited) in the EIS.

[94] EIS Appendix K6, p1

Figure 23: Location of echidna diggings within the study area (EIS Figure 14-1)

It is expected that impacts to echidnas and their habitat during construction will be low, however given the likely presence of Kangaroo Island echidnas on or near the site, there is a risk of echidnas being struck or killed by trucks entering the site along Freeoak Road. Given the size and volume of trucks expected (as outlined in section 5.6.2 of the EIS) – 24 hours/day A-double truck every 22 minutes / B-double every 16 minutes / semi articulated every 11 minutes – this risk is significant. It is noted that the 2nd Addendum included an amendment to the proposed hours of haulage (6am to 6pm Monday to Friday) and vehicles used (semi-trailers, or high productivity vehicles (HPV) being either 7-axle or 8-axle truck and dog trailers).[95] However, the amount of timber to be harvested remains similar, being 712,000 tonne per annum. This will result in a truck passing along the specified route every 3.5 to 6 minutes (vehicle dependent).

The Department of Agriculture, Water and the Environment advised that echidnas tend to be more active between dusk and dawn, and in particularly during the breeding season between May and August. This poses a significant risk as they are more active and with limited surrounding light, they will be harder to spot if trucks are traversing the road during these periods.

[95] Second Addendum, sections 2.3.2 and 2.3.5

The EIS stated that echidnas have an acute sense of hearing and will likely 'freeze or take cover underground' and that the likely noise and vibration from the trucks would 'deter echidnas from entering the area'[96]. Although echidnas may be deterred or move away, there remains possibility that they may not move in time, or they may freeze making them even more susceptible to truck strike. Additionally, the patch of vegetation where the diggings were observed is narrow in size (roadside vegetation only) with limited other vegetation near the subject site, providing the echidna with little choice to move to or seek shelter in when trucks come and go from the site.

The EIS acknowledged that vehicle strike of echidnas is increasing on Kangaroo Island as road traffic increases, with the Echidna Watch program recording 35 deaths in 2017 and in another year 40 deaths were recorded on a single road (the newly sealed South Coast Highway). The EIS noted that the number of reported vehicle strikes along Playford Highway and Gosse, Parndana and Stokes Bay roads has increased over recent years. It also notes that total road kills of echidnas are likely to be under-estimated due to the number of unreported incidents[97].

The EIS identified that the majority of echidna strikes occur between May and August during the courtship and breeding season.

It is also noted that there is no national recovery plan in place for this species[98].

The EIS committed to a range of management and mitigation measures[99] including:

- minimising vegetation removal
- incorporating echidna awareness into employee induction
- signage along Freeoak Road
- reduced vehicle speed limits on Freeoak road and within the subject area
- signage along transport routes
- using preferred route for forestry vehicles
- using higher productivity vehicles (A and B-Doubles)
- record keeping of sightings and strikes
- inspecting woodchip piles pre ship loading.

It is noted that proposed mitigation methods go beyond the subject site.

The EIS contained an assessment of the development against the MNES Significant Impact Criteria (Table 14-6) and concluded that there would be potential impacts to echidnas due to increased road use and vehicle strikes.

The Commonwealth Department of Agriculture, Water and the Environment raised concern regarding the timing of vehicle movements and the need to avoid potential peak active times for echidnas. The Department raised concern over the reduced manoeuvrability and braking distance of larger trucks and impacts on fauna strike, however acknowledged that the use of larger trucks will result in fewer trips and that this is advantageous in reducing potential impacts due to fewer vehicle movements.

In its response, the proponent advised that it would 'accept some limit on operating hours', however that 'limiting operating hours would result in an increase to the frequency of truck movements to enable the same amount of timber product to be transported'. The proponent also advised that that

[96] EIS Chapter 13, p278

[97] EIS Chapter 14, p291

[98] EIS Chapter 14, p291 and Appendix K3 p8 and Appendix K6

[99] EIS Appendix K3 Table 3-9 and Appendix K5

it 'cannot commit to the use of larger trucks to transport timber as road upgrades are required to accommodate this and that this is outside of the proponent's control'.

The Commonwealth Department of Agriculture, Water and the Environment noted the proposed reduced hours of haulage outlined in the 2nd Addendum. However, concerns were raised regarding vehicle strike risk during dusk and dawn, and that the proposed reduced hours of haulage do not accommodate for this high strike risk period. The proponent reiterated[100] an intent to haul the same amount of timber, regardless of hours of haulage and that any further reduction in haulage hours will result in more frequent truck movements. The proponent confirmed this position in its response to submissions on the 2nd Addendum.

In final advice received from the Commonwealth Department of Agriculture, Water and the Environment they advised that whilst the preference remains to avoid truck movements during these high risk times, it is recognised that this may not always be possible from an operations perspective or could have unintentional consequences/impacts to threatened species which may not have been assessed (e.g. substantially increasing the overall number of trucks operating at any one point during daylight hours). As such the Department would be open to the proponent proposing alternative strategies to manage the risk of vehicle strike if these measures are likely to be just as effective. However the Department advised that vehicle strike monitoring is crucial to verifying the efficacy of the proposed offset measures and will be necessary to enable the Commonwealth delegate to determine if the risk is sufficiently low enough to approve the proposal (under to the Environment Protection Biodiversity Conservation Act). As such, the Department requires that the proponent develop a robust Vehicle Strike Monitoring Strategy in consultation with the Department.

The Department supported and recommended the use of Traffic Management Plans including measures such as speed limits, curfews, vehicle strike monitoring, signage and other communications to help mitigate the impacts on fauna strike. The Department also required that driver education include native fauna and a reporting framework for vehicle strike incidents to monitor impacts.

It is proposed that, if approved, the final hours of transportation be further explored and conditioned as part of the development of the required Road and Traffic Management Plan (discussed at section 5.6.2 and fauna strike reporting and monitoring can be further explored as part of the required Fauna Management and Monitoring Plan and Driver Code of Behaviour.

The EIS (Appendix K6) contained a proposed echidna offset strategy as required by the EPBC Act and the EPBC *Environmental Offsets Policy 2012*. Offsets must seek to replace environmental values which may be lost as a result of a development. Specifically, the proponent is required to set aside an area or take actions that provide a measurable conservation gain for the Kangaroo Island echidna for the full duration of the impact.

The proposed offset package as outlined in the EIS is to reduce the threat to echidnas from feral cats thorough a financial contribution to the Feral Cat Eradication Program. The proponent proposed this as the offset as it advised that 'it is not possible to prevent timber transport trucks from striking animals' and that creating new habitat is not an option as it 'is not considered viable due to the significant cost implications'[101]. The EIS identified that sponsorship of the feral cat eradication initiative would have wider benefits including to assist in the recovery of other animal species potentially affected by the proposal, including the Southern brown bandicoot.

[100] Verbal discussion with AGD-PLUS staff and in its response to DAWE on Second Addendum comments

[101] EIS Appendix K6

Specifics of the offset proposed include funding for[102]:

- the training of additional detector dogs
- additional devices (e.g. aversion technology and control devices) and equipment
- contractors to implement trials of new technologies
- contractors to roll out additional aspects of the program that are currently not funded.

The proponent has committed to monitoring and recording roadkill incidents and hotspots along the transport route and to working with government, community and research groups to collect baseline data for vehicle strike fatalities along the proposed haulage routes to provide data for any adaptive management response that may be required. The proponent also committed to collecting data over a minimum 12-month period to provide a representation of seasonal variation in traffic movements and animal behaviour[103]. This data would be cross-checked with the data against the existing roadkill database. The Commonwealth Department of Agriculture, Water and the Environment supported this commitment. The proponent considers that this is a 'direct offset' as it will have a direct impact on reducing the predation of echidnas.

The Commonwealth Department of Agriculture, Water and the Environment advised that it is supportive of the proposed offset strategy but required some additional information to fully assess the conservation benefits of additional funding to the Feral Cat Eradication Program.

The proponent also committed to undertake awareness training for all drivers and that all drivers would be encouraged to report any vehicle strike, however acknowledged that there is scope for error in recording of vehicle strikes as not all strikes may be recorded or may go unnoticed.

Following the bushfires, in consultation with the Commonwealth Department of Agriculture, Water and the Environment, the proponent reviewed the proposed offset as outlined in the EIS. It determined that it was still relevant as predation by feral cats remains one of the main threats to the Kangaroo Island echidna.

Compensatory measures related to EPBC offsets must be implemented in advance of any impact. The proponent commits to provide a baseline monetary contribution to the offset program prior to the commencement of any construction activity, with ongoing offset payments being adjusted based upon the actual number of echidna road kills. The proponent committed that this would occur over the life of the proposed forestry operation.

The Commonwealth Department of Agriculture, Water and the Environment advised that they are supportive of the proposed offset program in principle, however finalisation of the monetary contribution and identification of the likely conservation outcome that will be achieved from the funds provided is still required. The Commonwealth Department advised that if approved, a Kangaroo Island Echidna Management, Monitoring and Offset Plan will be required and implemented and must include details of monetary contribution and outcomes to be achieved.

The AR concludes that the construction and operation of the proposal is likely to have a significant impact on the Kangaroo Island echidna due to the location of important habitat within the proposal site and, more significantly, the risk of vehicle strike along the transport route to the site. This impact will be increased with proposed reduced hours of haulage, however avoidance of dusk to dawn is critical to avoid this time of highest echidna activity and mitigate this risk.

[102] EIS Chapter 14, p320

[103] That has been maintained by Dr Peggy Rismiller, of the Pelican Lagoon Wildlife and Research Centre, for approximately 30 years.

As the existing population of the echidna is small, any increase in mortality is assessed as being potentially significant. Given the impact of the fires on echidna numbers, this impact is further exacerbated.

The Commonwealth Department of Agriculture, Water and the Environment is satisfied that with correct management and mitigation measures, the risks to the echidna can be managed through the preparation of a Kangaroo Island Echidna Management, Monitoring and Offset Plan prepared in consultation with, and to the satisfaction of, the Commonwealth Minister for the Environment.

The plan must:

- **outline an appropriate methodology to monitor impacts on the Kangaroo Island echidna during construction and operation of the proposal**
- **identify measures to avoid and mitigate impacts from the project's activities**
- **outline measures available to limit vehicle operations outside of high-risk periods including a limit on transportation hours from sunrise to sunset avoiding dawn and dusk (i.e. 30 minutes after sunrise and 30 minutes before sunset), speed restrictions and avoidance of high-risk areas**
- **take into account vehicle types and their respective braking distance and avoidance capability**
- **commit to establishing baseline data on the echidna population, measures to monitor vehicle strike events and details of options (operational modifications) to reduce the number of strike events**
- **ensure a record/log of vehicle strikes is publicly available.**

The Commonwealth Department of Agriculture, Water and the Environment also require a Vehicle Strike Monitoring Strategy be developed. This can be incorporated as a sub-plan of the Kangaroo Island Echidna Management, Monitoring and Offset Plan

Based upon advice from the Commonwealth Department of Agriculture, Water and the Environment, a contribution to the Feral Cat Eradication Program may be considered acceptable, should the offset proposal demonstrate that the program is effective, timely and establishes a clear relationship between monetary contribution to the program and decreased mortality in the Kangaroo island echidna population, proportional to the scale of the impact. The Commonwealth requires that the Kangaroo Island Echidna Management, Monitoring and Offset Plan contain details of the proposed offset, as agreed to with the Commonwealth.

The Commonwealth also require that the plan include reporting and review mechanisms. The timing of these are at the discretion of the Commonwealth, however it is recommended that reporting required by the Commonwealth be made publicly available. If approved this requirement is recommended as a condition.

Hooded plover (eastern) (*Thinornis rubicollis rubicollis)*

The Hooded plover (eastern) is listed as vulnerable under the EPBC Act. It is widely dispersed on or near sandy beaches in south-eastern Australia with its range extending from Jervis Bay (NSW) to the western reaches of the Eyre Peninsula (SA) and includes various offshore islands including Kangaroo Island. In 2014 it was estimated that there were approximately 620 individuals in South Australia. Kangaroo Island is home to about one-third of this population[104].

[104] EIS Chapter 14, p293

Coastal development, humans, dogs and vehicles on the beach and near breeding areas are the major threats to Hooded plovers with other birds a minor threat. The Hooded plover (eastern) mainly inhabit open sandy beaches, adjacent dunes tidal bays and estuaries, however can be found in other habitats such as rock platforms and reefs. On Kangaroo Island, their breeding sites are mostly associated with beaches less than 10km long and 20m wide with complex dune systems. They prefer remote areas not well frequented by walkers, fishers or dogs.

The subject site is comprised of a rocky foreshore within which approximately 10m has been cleared of boulders to form a sheltered sand section.

The EBS Ecology Smith Bay Ecological Assessment (Appendix J) identified that a pair of Hooded plovers was recorded at Smith Bay in 2010, 2014 and 2016. These sightings observed the birds foraging on the rocks and were all in the eastern section of the bay, approximately 1.8km from the project area. Nesting behaviour was not recorded[105].

Figure 24: Sightings of the Hooded plover (eastern) in the vicinity of the subject site (EIS Figure 14-2)

It is noted that Smith Bay is not identified as a known breeding site and does not have the characteristics of a breeding site for Hooded plovers. The area is not known as a flocking site and is not considered to contain critical plover habitat. However, this does not mean that Hooded plovers will not nest, rest or forage at the bay.

The Hooded plover breeding season is between mid-November and late January. As such, it is expected that construction activities outside of this breeding period would not have a significant impact on the species population on the island.

[105] EIS Chapter 13, p278

The key potential impact on the Hooded plover (eastern) from the original proposal was from the modification of the beach zone during construction of the causeway, which may have resulted in a loss or fragmentation of habitat. The amended design removes the construction of the causeway which eliminates this risk as there will be no direct loss of potential nesting habitat on the beach[106].

Notwithstanding the reduced risk associated with the amended design, the EIS committed that if a Hooded plover (eastern) nesting site was found during construction or operation of the proposal, a buffer zone – the extent of which would be determined in consultation with the Department for Environment and Water (DEW) – would be implemented around the nest during the breeding season[107]. The Commonwealth Department of Agriculture, Water and the Environment supports this proposal.

The EIS also committed to reduced vehicle speed limits in the subject site and induction of operators to identify plovers and their nests.

The EIS contained an assessment of the development against the MNES Significant Impact Criteria (Table 14-8) and concluded that there would be no residual significant impacts to the Hooded plover (eastern) as a result of the proposal.

The Commonwealth Department of Agriculture, Water and the Environment did not raise any concern in relation to potential impacts on the Hooded plover (eastern).

The AR concludes that the construction and operation of the proposal is likely to have negligible effects on the Hooded plover (eastern) as the subject site is not a critical habitat, breeding or flocking area for this species. The amended design removing the causeway further reduces risk of impact as there will be no direct loss of potential nesting habitat on the beach.

The management and mitigation procedures proposed in the EIS are considered reasonable and if approved a condition requiring their implementation is proposed.

Any residual risks to Hooded plover (eastern) can be successfully managed through the implementation of on Environmental Management Plan Framework, including the preparation of a Fauna Management and Monitoring Plan (prepared in consultation with the relevant agencies).

Southern brown bandicoot (eastern) (*Isoodon obesulus obesulus*)
It is acknowledged that the island's Southern brown bandicoot population may have been impacted by the December 2019 / January 2020 bushfires. The estimate of the remaining population is unknown at the time of writing this report. Early analysis undertaken by the Commonwealth Department of Agriculture, Water and the Environment indicates that between 10-30% of the bandicoots modelled likely or known distribution was affected[108].

The assessment below is based upon the known information prior to the bushfires.

Southern brown bandicoots are medium-sized, ground dwelling native marsupials. They are the last bandicoot species naturally occurring in South Australia. The Southern brown bandicoot is considered widespread but not abundant, on Kangaroo Island[109].

[106] First Addendum Section 4.6.1, p19

[107] EIS Chapter 13, p 281

[108] Response Document – Appendix A, p15

[109] *National Recovery Plan for the Southern Brown Bandicoot*, Geoff W. Brown and Micaela L. Main, June 2010

They are nocturnal and rarely venture far from cover. They prefer areas of dense vegetation between 20cm and 1m high. Surveys undertaken in 2008 (Threatened Species Scientific Committee) suggest that the sub-species was widespread across Kangaroo Island. The species has been seen within a 10km radius of Smith Bay, however there are no recorded sightings of the species in the project area. The nearest recorded sighting was in 2011, approximately 2km south-west of the subject site.

Figure 25: Sightings of the Southern brown bandicoot (eastern) in the vicinity of the subject site (starred) (EIS Figure 14-3)

Habitat loss and degradation, road traffic and predation are the major threats to Southern brown bandicoots.

The EIS (Appendix K) identified that although the development (during the operational phase) will result in significant increase in truck movements from the plantation areas to the subject site, no area along the preferred route is considered critical habitat for the Southern brown bandicoot.

However, any increase in traffic will lead to an increase in the risk of vehicle strike to bandicoots. The EIS committed to reduce this risk by using the preferred route to transport timber product; minimising the number of vehicles required through the use of A-double and B-doubles and vehicle speed limits within the subject site; implementing driver education and awareness training; signage; and reporting of vehicle strikes[110]. The 2nd Addendum included proposed reduced hours of haulage (6am to 6pm Monday to Friday) and a change of proposed vehicles to be used (semi-trailers, or high productivity vehicles (HPV) being either 7-axle or 8-axle truck and dog trailers).[111] However, the amount of timber to be harvested remains similar, being 712,000 tonne per annum. As identified previously, this will result in an increase in frequency of truck movements.

The EIS identified (Appendix K) that the proposal will not result in the removal of any significant strands of remnant vegetation at or around the subject site that would be considered critical habitat for bandicoots. The EBS Ecology Smith Bay Ecological Assessment (Appendix J) concluded that due to the degraded nature of the vegetation and patchy distribution of the remaining vegetation at the subject site, it is unlikely that the bandicoot will inhabit the site.

The EIS contained an assessment of the development against the MNES Significant Impact Criteria (Table 14-10) and concluded that there would be no residual significant impacts to the Southern brown bandicoot (eastern) as a result of the proposal.

The Commonwealth Department of Agriculture, Water and the Environment did not raise specific concern in relation to potential impacts on the Southern brown bandicoot (eastern), although noted overall that the proposal poses a significant vehicle strike risk to native fauna on the island (particularly now species are less plentiful than previously due to the 2019/2020 bushfires). The Department required that driver education include native fauna and a reporting framework for vehicle strike incidents to monitor impacts.

[110] EIS Chapter 14, p 316

[111] Second Addendum, sections 2.3.2 and 2.3.5

The AR concludes that the construction and operation of the proposal may have impact on the Southern brown bandicoot (eastern) due to the risk of vehicle strike along the transport route to the proposal site. As the existing population is not abundant, any increase in mortality is considered reasonably significant.

Given the impact of the fires on bandicoot numbers, this impact is exacerbated.

However, with correct management and mitigation measures, the risks to the Southern brown bandicoot (eastern) can be reduced through the implementation of an Environmental Management Plan Framework, including the preparation of a Fauna Management and Monitoring Plan (prepared in consultation with the relevant agencies).

The plan should outline appropriate methodology to monitor impacts on the Southern brown bandicoot (eastern) during the construction and operation of the proposal and identify measures to avoid and mitigate impacts from the project's activities.

The plan should contain measures to monitor vehicle strike events and details of options (operational modifications) to reduce the number of events. The plan should also take into account vehicle type and their respective braking distance and avoidance capability.

A record/log of vehicle strike should be kept and made publicly available.

Rosenberg's goanna

It is reasonable to assume that the island's Rosenberg's goanna population has been heavily impacted by the December 2019 / January 2020 bushfires, including areas in and around KIPT plantations. The estimate of the remaining population is unknown at the time of writing this report. Any additional losses as a result of increased traffic in these areas could significantly hamper natural recruitment and recovery of this species, which is known to have a low net reproductive rate.

The Rosenberg's goanna (*Varanus rosenbergi*) is the only goanna on Kangaroo Island. The species was once common over a large portion of southern Australia but their numbers have declined so drastically that the goannas are now listed as vulnerable to threatened across their mainland range.

The KI NRMB, undertakes and supports investigations into the changing goanna population and gaining information about their general ecology.

Male goannas move over areas of up to 15km^2 with females travelling less due to the large energy investment associated with breeding and egg development. Juvenile survival rates are low with only one out of 12 surviving the first year[112].

The EIS is silent on potential impacts the proposal may have on the island's Rosenberg's goanna population.

Concern regarding the impacts of increased road kill as a result of increased vehicle movements on the Rosenberg's goanna was raised in several submissions during the public consultation period, including by the Department for Environment and Water which advises that due to their attraction to the decaying flesh of dead animals, the rate of Rosenberg's goanna road deaths increases in line with

[112] Natural Resources Kangaroo Island website: 'Rosenberg's goanna' page

the amount of traffic around the island[113]. Acknowledging this, the Department requested the proponent asses the traffic impacts on the Rosenberg's goanna, acknowledging that the goanna is attracted to roads to consume roadkill.

In its response, the proponent did not undertake a detailed assessment of the traffic impacts, instead stated that 'roadkill is an expected outcome' of the proposal. The proponent committed to undertake inspections of the transport route to relocate roadkill from the immediate vicinity of the road/roadside to deter scavenging animals (including Rosenberg's goanna). The proponent would provide any goanna carcases to Dr Peggy Rismiller as part of her ongoing research into this species.

The proponent also committed to contact local wildlife rescue network in the event that roadside inspections uncover injured wildlife (including the Rosenberg's goanna).

The proponent's 1st Response Document does not contain details regarding how often inspections will occur, how the proponent will ensure inspections will be undertaken, or by whom. Nor does it contain information regarding reduced speed in known 'hot spot' areas for the goannas[114].

As indicated above, the proponent commits (Appendix A, 1st Response Document) to undertake awareness training for all drivers about the Kangaroo Island echidna to help increase awareness of vehicle strike, with drivers being required to report any vehicle strike that occurs. It could be inferred that this applies to any road kill, including the Rosenberg's goanna, however this is not made explicit.

The Department for Environment and Water (DEW) provided further advice that it is supportive of recommended conditions to manage impacts in this regard, including the implementation of a Fauna Management and Monitoring Plan, prepared in consultation with the department and the Kangaroo Island Landscape Board. The Department will be able to work with the proponent to ensure details of mitigation measures for Rosenberg's goanna such as awareness training for drivers, roadkill removal, speed restrictions and the importance of baseline date are made explicit in the plan.

The AR concludes that construction and operation of the proposal is likely to have an impact on the Rosenberg's goanna due to the risk of vehicle strike along the transport route to the proposed site. As the mainland population is in decline, any increase in mortality (mainland or Kangaroo Island) will have a material impact on the future prospects for the survival of the species. Given the impact of the fires on goanna numbers, this impact is exacerbated.

With proper management and mitigation measures, the risks to the Rosenberg's goanna can be reduced to an acceptable level through the preparation and implementation of a Fauna Management and Monitoring Plan prepared in consultation with the Department for the Environment and Water and the Kangaroo Island Landscape Board, however they will not be eliminated entirely.

The plan should outline appropriate methodology to monitor impacts on the Rosenberg's goanna during construction and operation of the project and identify measures to avoid and mitigate impacts from the project's activities. The plan should outline measures to limit vehicle operations, including a limit on transportation hours from sunrise to sunset, avoiding dawn and dusk (i.e. 30 minutes after sunrise and 30 minutes before sunset) and speed restrictions. The plan should also take into account vehicle types and their respective braking distance and avoidance capability. The plan should reference, or include, a Driver Code of Behaviour that incorporates driver education on

[113] Natural Resources Kangaroo Island website: 'Rosenberg's goanna' page

[114] Roadkill hotpots identified in Figure 2, Appendix A, Response Document, based upon Dr Peggy Rismillers research.

native fauna specific to the island and strike risk. The Driver Code of Behaviour should be prepared in consultation with the Department for Environment and Water, Kangaroo Island Landscape Board and the National Parks and Wildlife Service SA.

The plan should also contain a commitment to establish baseline data on the Rosenberg's goanna population, measures to monitor vehicle strike events and details of options (operational modifications) to reduce the number of strike events. A record/log of vehicle strike should be kept and made publicly available.

Koala *(Phascolarctos cinereus)*

It is acknowledged that the island's koala population was significantly impacted by the December 2019 / January 2020 bushfires. It is estimated that more than half the island's koala population was killed in these fires with potential of only up to 10,000 remaining[115]. A final estimate of the remaining population, both for the island as a whole and within the plantations, is unknown at the time of writing this report. Koala management practices (both state and National) may change as a result of the bushfires, however this is also unknown at the time of preparing this report and cannot be pre-empted. The assessment below is based on information prior to the bushfires.

Many submissions were received in relation to koala management and welfare during the harvest and felling operations, as well as the impact that koalas may have on the island's National and Conservation Parks if they were to relocate following the felling of the plantations.

The management and harvesting of the existing plantation timber is subject to separate licences/permits, policies and guidelines outside the remit of the state's land use planning system and is outside the scope of the Major Development proposal at Smith Bay. However, the Major Development assessment for this proposal does consider the impacts from 'plantation to port' and as such, recognition and consideration of potential impacts on Kangaroo Island's koala population is warranted.

Koalas were introduced to Kangaroo Island in the 1920s. Due to rapid population growth, the koala population on the island significantly increased in size with abundant habitat and no natural predators. Prior to the bushfires, there was an estimated 25,000 koalas in native vegetation on the island with an additional 23,000 koalas estimated to be in commercial bluegum plantations[116].

Koalas are a protected species under the *National Parks and Wildlife Act 1972* and the Department for Environment and Water is responsible for their protection and management. In 1997 the Department introduced the Kangaroo Island Koala Management Project to reduce and maintain koala numbers to a sustainable density through the use of non-lethal management options. A regular koala population census is also conducted which showed significant reductions in koala density in areas where management had been focused. The Kangaroo Island Koala Management Project has been suspended, subject to review following the fires.

The *South Australian Koala Conservation and Management Strategy 2016* outlines actions aimed at specifically reducing the risk of koalas being injured during forestry harvesting. These include training contractors and their staff, and employment of 'koala spotters' to locate koalas ahead of harvesting operators and advice of their presence. Forestry companies across the state are expected to abide by these policies and guidelines.

[115] Advertiser Wed 12 February 2020 estimates between 5,000 and 10,000 koalas remain (pg 8 'Shocking KI Koala death toll revealed')

[116] Natural Resources Kangaroo Island website: 'Koala Management' page (KI koala population survey 2015)

The EIS is relatively silent on the impacts the proposal may have on the island's koala population. Although the subject site itself does not contain habitat suitable for koalas and no koalas are present at the site of the proposed wharf, it is recognised that the forestry plantations contain a high percentage of the island's koala population[117].

The EIS committed that 'harvesting would be carried out in accordance with established industry and government guidelines, in particular with respect to the care and protection of introduced koala populations that have colonised some of the eucalypt plantations' and that harvest operations would include the use of koala spotters[118]. This commitment is in line with current forestry industry standards.

The AR notes that whilst the operation of the proposal may have an indirect impact on the koalas that reside in blue gum plantations on the island, the management of these koalas is outside the scope of this proposal and is subject to other controls and management practices.

It is acknowledged that the December 2019/January 2020 bushfires had a significant impact on the koala population of Kangaroo Island and in particular the populations that resided in the island's plantations. It is also acknowledged that the proponent will be required to follow established industry and government guidelines in respect to koala care and welfare within the plantations. Notwithstanding this, and in particular following the bushfires, it is recommended that managing the indirect impacts of harvesting the island's plantation timber on resident koala populations be considered in the Environmental Management Plan Framework through inclusion in the Fauna Management and Monitoring Plan prepared in consultation with the relevant agencies.

The proponent is encouraged to continually engage with the Department for Environment and Water in relation to koala management within the plantations.

Other terrestrial fauna

The EIS and 2nd Addendum are silent on other terrestrial fauna that may be impacted (e.g. macropods[119]) along the transport route. Whilst these species may not be nationally listed as threatened or vulnerable, and may be abundant across the island, any increase in traffic will result in an increase in the risk of vehicle strike to these fauna which could have an impact on local biodiversity over time.

The proponent's Response Documents and 2nd Addendum did not undertake a detailed assessment of the traffic impacts on fauna, instead stating that 'roadkill is an expected outcome' of the proposal and that there 'is no evidence to suggest heavy vehicles are disproportionately responsible for roadkill' and 'existing local and tourist traffic would remain the most significant contributor to fauna deaths on the roads'.[120]

Whilst it is acknowledged that fauna strike is unavoidable on the island's roads, DEW advised that the statements made by the proponent are not accurate as most animal strikes occur around dusk and dawn when tourism traffic along the proposed routes does not increase significantly (noting that currently limited tourism traffic occurs between 6am and 9am).

[117] Prior to the December 2019/January 2020 bushfires

[118] EIS Chapter 4, p57 / Chapter 20, p447

[119] Plant-eating marsupial mammal of an Australasian family that comprises the kangaroos and wallabies

[120] Second Addendum, section 2.4.4

DEW advised that there is currently a high number of roadkill as a result of heavy vehicle traffic along Hog Bay Road associated with the early freight ferry and as such it is expected that heavy vehicle traffic in the early hours of the day on the island's roads when more macropods are mobile will result in more roadkill than average tourist traffic.

The AR concludes that construction and operation of the proposal is likely to have an impact on the island's terrestrial fauna due to the risk of vehicle strike along the transport route to the proposal site.

With proper management and mitigation measures, the risks to terrestrial fauna can be reduced through the preparation and implementation of a Fauna Management and Monitoring Plan prepared in consultation with the Department for Environment and Water and the Kangaroo Island Landscape Board. However, the risks will not be eliminated entirely.

The plan should detail an appropriate methodology to monitor impacts on terrestrial fauna during construction and operation of the proposal and identify measures to avoid and mitigate impacts from the project's activities. In particular, the plan should:

- **outline measures to limit vehicle operations, including a limit on transportation hours from sunrise to sunset, avoiding dawn and dusk (i.e. 30 minutes after sunrise and 30 minutes before sunset) and speed restrictions**
- **take into account vehicle types and their respective braking distance and avoidance capability**
- **include a Driver Code of Behaviour that incorporates driver education on native fauna specific to the island and strike risk. The Code should be prepared in consultation with the Department for Environment and Water, Kangaroo Island Landscape Board and the National Parks and Wildlife Service SA.**
- **detail measures to monitor vehicle strike events and mitigation options (such as operational modifications) to reduce the number of strike events. A record/log of vehicle strikes should be made publicly available.**

5.4.5 Emissions

A summary of impacts on the adjacent aquaculture operation (Yumbah) are presented at section 5.5.1.

5.4.5.1 Air Quality

Air Quality - Guideline 5: It is expected that air pollution (in particular dust) will occur during the construction phase as a result of the use of earthmoving equipment and the physical construction of the structures. Post construction, the movement of vehicles to and from the proposed site, stockpiling and ship loading operations onsite at Smith Bay will generate air pollution (in particular dust). There exists a sensitive receptor (aquaculture/abalone farm) immediately adjacent to the site that is critically sensitive to dust.

EIS Chapter 17 and Appendix M relate to air quality impacts.

Activities associated with the proposal that have the potential to affect air quality within the subject area include land clearing; vehicle movements (on unsurfaced roads); vehicle and equipment emissions; construction activities; unloading of woodchips and logs; wind erosion of woodchip stockpiles and stockpile pads; and loading of woodchips onto the ship loader.

The EIS identified two nearby residential sensitive receivers (at 500m south-west of the site and 700m south-east of the site) and Yumbah's on-land aquaculture facility (100m east of the site). Dust impacts on the adjacent aquaculture facility are of particular concern given the proximity to the proposal.

Figure 26: Location of sensitive receivers (EIS figure 17-1)

The EIS identified that Kangaroo Island has no air quality monitoring stations and as such baseline air quality for the assessment was estimated using the result of monitoring at other similar (coastal and agricultural and/or pastoral) sites within South Australia. The results are presented in the EIS (Table 17-2) and were compared with other recent assessments, which included baseline monitoring, and the results are considered conservative compared to other locations within the state[121]. The EPA did not raise any concerns with this estimation methodology.

The EIS identified that estimates of the rate of emission of particulate matter (in grams per second g/s) were generated using emission factors that relate site activities to the amount of dust generated using relationships between, for example, the size of an exposed area or the rate of timber throughput. Emissions factors are mathematical equations developed through the monitoring of dust emissions for particular dust-generation operations and are provided by either the Commonwealth Government (in the case of the National Pollutant Inventory, NPI, emission factors) or the US EPA (in the case of the AP-42 emission factors)[122].

Due to the lack of site-specific information, the emissions estimates provided in the EIS used the default National Pollutant Inventory (NPI) emission factors. In its submission the EPA advised that it was satisfied with the conservative inputs and the use of National Pollutant Inventory (NPI) estimation techniques and US *EPA AP-42: Compilations of Air Pollutant Emissions* Factors methodology.

[121] EIS Chapter 17, p381-382

[122] EIS Chapter 17, p383

The South Australian *Environment Protection (Air Quality) Policy 2016* (Air EPP) provides criteria for ambient air ground-level concentrations, however no criteria are provided for the protection of amenity from nuisance dust. The EIS identified that for the assessment of nuisance dust for this proposal, the NSW Environment Protection Authority criteria for deposited dust were adopted (NSW EPA 2017). The use of NSW (or similarly the Victorian) assessment criteria for deposited dust is common practice for assessments in South Australia.

Construction

Approximately 10 hectares of land is proposed to be cleared, of which 5.6 hectares would be utilised for the woodchip and log storage areas. The remaining clearance would be for the construction of access roads, stormwater systems, site office and ablutions, and electricity infrastructure.

For the purposes of modelling, it was assumed that construction of the on-land components would take 9 months. It was assumed that long-term stockpiles of construction material would not be required, a single grader/scraper would be used, and water sprinklers would be run during the operation of the grader/scraper to supress dust and wind erosion which is assumed to occur only when the dust lift-off wind speed threshold is reached. In the absence of site-specific data, this threshold was assumed to be the NPI default value of 5.4m/s. Below this speed, wind erosion emissions were assumed to be zero[123]. The default NPI wind erosion rates for total suspended particulate and PM_{10} particles (i.e. the fine particles found in dust and smoke that have a diameter of 10 micrometres smaller) were applied.

The access road to the site (Freeoak Road) is currently unsealed and the EIS did not identify that this road would be sealed. The 2nd Addendum identified a commitment to upgrade this road to a higher standard[124]. Sealing the road is not explicitly mentioned, however the proponent has indicated (verbally) that this may occur. Whilst the EIS described the expected number of vehicle movements related to the construction of the causeway, this component is no longer part of the proposal; however, there is still expected to be some vehicle movement during the construction period.

Operation

For the purposes of modelling, normal operations were assumed to occur 5 days a week during daylight hours with ship loading occurring up to 25 times a year at any time.

It was assumed that 19m semi-articulated trucks would be used for timber transportation to and from the site (annual average of 600,000 tonnes/annum and up to a maximum of 730,000 tonnes/annum) and that half of these truck movements would be with an empty truck (i.e. after depositing timber at the site). Although not specified it is assumed that this vehicle type was used for modelling purposes as it would result in the most truck movements to and from the site compared to A and B-Double movements which is preferred by the proponent. The 2nd Addendum identified that semi-trailers or HPVs (7 or 8-axle truck and dog trailers) would be used to transport timber (up to 712,000 tonnes/annum) to the site[125]. Accordingly, the modelling presented in the EIS for air quality purposes remain valid.

Light vehicles would also access the site, however these volumes would be minor compared to the heavy vehicle movements and as such were not included in the assessment. All vehicles were assumed to be restricted to 15kph. The default NPI emissions factors for total suspended particulate per vehicle kilometres travelled were applied[126].

[123] EIS Chapter 17, p 384-385

[124] Second Addendum, section 2.5.3

[125] Second Addendum, section 2.3.5

[126] EIS Chapter 17, p385

Neither the NPI nor the US EPA AP-42 emission estimation technique manual specifies emissions factors for unloading woodchips or handling logs. The US EPA report, *Assessment of Fugitive Particulate Emissions Factors for Industrial Processes* states that log handling and bucking are normally negligible sources of emission. The proponent also undertook a literature review that failed to reveal any documented emission of dust generation information appropriate to the handling of logs. As such the handling of logs was not included in the air quality assessment. Overall, it was considered that dust emissions from the handling, treatment and storage of woodchips would represent a worst-case emissions scenario for the proposal.

To calculate a relevant emission factor, 10 percent of the emission factor for debarking as contained in the US Report was used (0.0012kg of total suspended particulate). This was based upon the value for debarking being 0.012kg per tonne of dust and the assumption that the majority of this dust would be generated and deposited at the plantation with more being dispersed during transportation[127]. This rate was also applied to stockpile reclaiming activities (loading and dumping to the conveyor feed hopper) and during ship loading activities, which was estimated at up to 75 days per year. It was also assumed that no dust mitigation (i.e. water sprays and/or enclosures) would be used during the woodchip reclaiming and ship loading activities, however the conveyor would be covered[128].

Although the proposed development does not include re-chipping on site, this activity was included in the assessment to be conservative and to accommodate a worst-case scenario of the potential impacts of woodchip handling on the surrounding receivers[129].

The EIS identified that once stockpiled, woodchips generally resist dispersion due to their size, however they may contain fine material that may be subject to wind dispersion. This risk was considered to be a lesser source of fine materials than the potential for wind dispersion of fine material that remains on the empty stockpile pads following ship loading. In order to present a conservative assessment, the emissions rates from bare stockpile areas, with an area of up to 5.6ha was applied. The default NPI wind erosion rates for total suspended particulate and PM_{10} particles were applied[130].

As identified previously, the EPA advised that it was satisfied with the conservative inputs and the use of NPI estimation techniques and US EPA AP-42 methodology for assessment.

The results of the air quality modelling for both the construction and operations phases indicated that the compliance criteria are likely to be achieved within the site boundary for the construction phase and within the immediate vicinity for the site boundary during operations. At the nearest sensitive receiver it is expected that there would be only slight increases in the ground-level concentration of pollutants, all of which comply with the relevant air quality criterion; and that dust deposition rates are expected to meet the criterion within the site boundary with an increase of approximately 0.1-0.4g/m^2/month over the baseline of 2/g/m^2/month[131]. Raw output was provided in Appendix M and model outputs presented in the EIS (Figures 17 10a-d and Figure 17 11a-d).

The EPA advised that as the assessment of dust deposition and greenlip abalone at the Yumbah facility was assessed against the NSW criterion for nuisance caused by deposited dust, which is a monthly measure, it did not allow for deposited dust peaks. In addition, the assessment did not adequately

[127] EIS Chapter 17, p385-386

[128] EIS Chapter 17, p391

[129] EIS Chapter 17, p386

[130] EIS Chapter 17, p386

[131] EIS Chapter 17, p391

consider the potential for significant short-term impacts on the Yumbah facility. The EPA requested further analysis to confirm that the monthly NSW deposited dust criterion is appropriate for the abalone facility, taking peak dust deposition into account.

The proponent responded that it considered that the information presented in the EIS was adequate as it provided a quantitative analysis of the expected rates of dust deposition onto Yumbah's farming facility and then assessed a worst-case scenario of the potential impact that dust deposition (at the expected rates) may have had on the farming system. The EPA advised that the predicted dust deposition rates, including peak release worse-case scenarios, was acceptable, however noted that there remains the potential for significant entrance of deposited dust from the shade cloth that is accumulated over time and then washed into the abalone infrastructure during a rain event.

It is noted that the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* suggests that a project should contribute no more than 2.0g/m^2/month and a total (from all sources) of 4.0g/m^2/month. The predicted rate of deposition at the Yumbah site as a result of the proposal (at 0.1-0.4g/m^2/month) is well below this guide and as such, it can be considered that no significant impacts in relation to dust or air pollutants will result. Notwithstanding, all practicable measures should be taken by the proponent to minimise dust deposition and any long-term build up at the Yumbah site.

The proponent advised, that notwithstanding the analysis indicating that dust deposition would not be at a sufficient level to cause problems at the Yumbah facility, a number of additional mitigation actions are being considered, including:

- reducing the height of the stockpile (which would reduce the potential for dispersion of wood-chip related dust)
- covering transfer points
- using water sprays to supress dust production
- installing screening (which could also mitigate against light spill impacts).

In addition to the above, the EIS contained a list of potential mitigation measures that may be implemented during construction and operations to further reduce emissions, including[132]:

- scheduling constructions works where practical to avoid dry, windy weather conditions
- covering loads
- using water sprinklers on cleared areas before infrastructure construction during periods of dry and windy weather
- damping down internal tracks in periods of dry and windy weather
- locating woodchip stockpiles from sensitive receivers and shielding them from wind through the surrounding pontoon infrastructure and log stockpiles
- using variable-height woodchip stackers and/or telescopic chutes for ship loading.

If approved, all of these options should be explored during the detailed design phase.

The proponent also committed to the installation of gauges on the site boundaries to monitor dust deposition rates before and during construction and during operation, to allow local air quality changes and/or amenity impacts to be quantified[133]. The EPA supported this and advised that the proposed mitigation measures are acceptable.

[132] EIS Chapter 17, p396

[133] EIS Chapter 17, p396

The EPA also requested that information about managing visual dust on a continuous basis be provided and that these details could be included in the appropriate Environment Management Plans, should be referenced in the EIS and a commitment made. The proponent committed that information about managing visual dust on a continuous basis would be included in the Environment Management Plans and that protocols for when works may need to cease or be modified would also be included. The EPA advised this was acceptable.

In its submission, Yumbah raised concern that the assessment is primarily focussed on impacts to human health and amenity rather than impacts on the abalone at the Yumbah facility. Yumbah questioned the interpretation of data and raised concern that the predicted increase of dust deposition of 0.1-0.4g/m^2/month will settle on the permeable shade cloth roofing of the grow-out tanks which will impact the abalone as dust will change the calibrated light filtration and will enter the tanks during rain events. Yumbah is particularly concerned that if concentrations of accumulated dust became high and a subsequent heavy rain event occurred, it could lead to mass mortality in the tanks. Yumbah indicated that this concern is further exacerbated as the unloading and storage areas of the proposed facility are to be located directly upwind of Yumbah's grow-out tanks.

The proponent responded that 80-90% of dust that enters the tanks is from background sources and any dust deposition resulting from activities at the proposed port will only increase from current levels by 10-20%. This will not have a material effect on water quality at the Yumbah facility as the expected impact will increase total suspended sediment loads by approximately 0.0014 mg/L to a maximum of value of 0.007mg/L. When dust that is deposited on the shade cloth washes through, the time required for the wood dust component to go into suspension (as observed during the ecotoxicology testing undertaken as part of the EIS studies) is approximately 2 hours which exceeds the typical retention time of water on the farm which is approximately 20-30 minutes. This means that any wood dust would float on the surface of the water and thus flow out of the farm long before it went into suspension.

The proponent also advised that rainfall events that might cause the wash through of deposited dust typically occur less than 9 days per year and as such, the dust fall though will be episodic and not an ongoing problem.

In relation to Yumbah's concern that as the proposed facility is upwind of the grow-out tanks dust impacts would be intensified, the proponent responded that prevailing winds are immaterial for the purposes of the air quality impact assessment as the conclusions presented in the EIS were based on the outputs of air quality modelling which included consideration of all meteorological conditions of every hour across a 12-month period. As such, the effects of prevailing winds, seasons and the location of the Yumbah tanks in relation to the proposed development were taken into consideration in the data presented.

The EPA has advised that it considers that the proposed measures to manage and mitigate dust are reasonable and practicable from a standard EPA air quality perspective (i.e. with a focus on human health and public nuisance considerations). In relation to dust sensitivity, the EPA requires a reasonable and practicable approach but does not set criteria for total suspended particles, which includes visible (or nuisance) dust. As a consequence, the deposited dust levels adopted by the proponent have been obtained from interstate jurisdictions, noting that they are based on public nuisance considerations. The EPA accepts this as an appropriate approach but the lack of direct data relating to the sensitivity of abalone to deposited dust makes it difficult to predict direct impact on the abalone. Therefore, the EPA supports a proposed requirement that should the development be approved, the proponent must seek input from a relevant marine biologist (noting that they should have the requisite expertise in abalone) when preparing an Air Quality and Dust Management Plan.

The EPA also supports a proposed requirement that the results of the dust monitoring must be made publicly available for the life of the project. It is proposed that the results of this dust monitoring be made available to both the EPA and the Department of Primary Industries and Regions, South Australia, who have the lead in relation to abalone matters.

The AR concludes that there is not expected to be any dust impacts on the two nearby residential properties however there will be impacts on the adjacent aquaculture facility, with modelling indicating that the proposal would result in a minimal increase of dust deposition at the facility. On the basis of advice received from the Environment Protection Authority, this increase is within acceptable criteria.

The Environment Protection Authority advised that is was satisfied with the proposed mitigation measures and the installation of gauges on the site boundaries to monitor dust deposition.

Notwithstanding this advice, given the sensitivity of abalone to dust, there remains potential that, if not adequately managed, longer term dust build-up may impact the adjacent aquaculture facility. Further work is therefore required in order to ensure that dust impacts from the facility are properly mitigated. If approved, this must be further explored in consultation with the Environment Protection Authority, both prior to construction, and during the operation, of the facility. Based upon advice from the Environment Protection Authority, the proponent must seek input from a relevant marine biologist with the requisite expertise in abalone.

The development and implementation of an Air Quality and Dust Management Plan, prepared in consultation with the Environment Protection Authority (and with input from a relevant marine biologist) and the development and implementation of a Construction Environmental Management Plan and an Operational Environmental Management Plan will be requirements of any approval. Additionally, if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Air quality impact issues during the operational stage will be covered by the EPA licence.

The Air Quality and Dust Management Plan must include a visual dust log/recording, dust deposition monitoring at the site boundary (adjacent to Yumbah Aquaculture) and include protocols for when works may need to cease or be modified in real-time to avoid non-compliance with the agreed dust deposition standards.

It is recommended that the results of the dust deposition monitoring be made publicly available for the life of the project. It is also recommended that a quarterly report be provided to the Minister for Planning and Local Government, the Environment Protection Authority and the Department of Primary Industries and Regions, South Australia, during the construction period and the first 12 months of operation, and every 6 months thereafter, for a period of 3 years.

Based upon the information presented in the EIS and advice provided from the Environment Protection Authority, subject to further dust mitigation measures being implemented in relation to the adjacent aquaculture facility, the AR concludes that these impacts can be satisfactorily managed.

Gaseous emissions

Gaseous emissions associated with the proposal include from vehicle movements to and from and at the site, materials handling equipment and the use of generators. The EIS identified that as the volume of vehicle movements is a small fraction of the existing vehicle movements on the roads in the vicinity

of the subject site and are consistent with other industrial operations, the volume of emissions of gaseous pollutants was considered to be immaterial and would not result in a significant change to the baseline air quality[134].

The EPA did not raise any concern regarding this.

The AR concludes that there will be minimal gaseous emissions as a result of the proposal.

The Construction Environmental Management Plan and Operational Environmental Management Plan must include a complaints strategy that identifies how a person can raise a complaint (and to whom), a management procedure for complaints and a complaints register that records the complaint received and how it was responded to. The complaints register must be made publicly available.

5.4.5.2 Noise

Noise and Light - Guideline 12: It is expected that both underwater and terrestrial noise pollution will occur during the construction phase as a result of securing the mooring and retaining structures to the seabed, the use of earthmoving equipment and physical construction of the structures. Post construction, the movement of vehicles to and from the proposed site, stockpiling and ship-loading operations onsite at Smith Bay will also generate noise. If construction and/or operations are to occur at night, there will also be light pollution impacts on the surrounding area.

EIS section 18.5, Appendix N and Addendum section 4.8 relate to noise and vibration impacts.

An environmental noise impact assessment was undertaken (Appendix N) by Resonate in relation to the proposal, including an assessment for both the terrestrial and underwater noise associated with both the construction and operation of the proposed facility. Additional modelling and assessment was undertaken (1st Response Document Appendix H) in response to the EPA submission on the EIS. The revised model reflected the following changes: increased distance of the floating wharf and ship loader from the shore and removal of the proposed on-site re-chipper.

Terrestrial

The EIS identified two nearby residential sensitive receivers (at 500m south-west of the site and 700m south-east of the site) and Yumbah's on-land aquaculture facility (100m east of the site). The EIS indicated that the proponent has an 'option to buy arrangement' with one of sensitive receivers (located at 500m south-west of the site), however it was still included in the noise modelling and assessment as at the time of preparation, as it was a residence owned by another party[135].

The EIS guidelines require the proponent to identify if environmental noise emissions associated with the proposal will comply with the *Environment Protection (Noise) Policy 2007* (Noise EPP).

The criteria for compliance differ during the construction and operational phases. The EIS included assessment for both phases and identified that operational noise from site activities will not meet on all occasions the requirements contained within the general noise provisions of the Noise EPP at all identified noise sensitive receivers (discussed in more detail in the 'operation' section below).

[134] EIS Chapter 17, p391

[135] Note: At the time of assessment, the proponent has not acquired this site.

Construction
During construction, equipment such as trucks, excavators, bulldozers, generators, cranes, concrete pumps, hand tools and other plant have the potential to cause noise impacts.

The Noise EPP identifies that an adverse impact on amenity occurs when there is a noise level greater than 45dB(A)L_{eq} (continuous level) or 60dB(A)L_{max} (maximum noise level) at a noise-affected premise. Such construction can only occur between the hours of 7.00am and 7.00pm Monday to Saturday. The Noise EPP also requires any person undertaking construction activity to take reasonable and practicable measures to minimise noise from their activities.

If construction activity does not cause continuous noise greater than 45dB(A)L_{eq} or any maximum noise greater than 60dB(A)L_{max} there are no limitations on the activity as it would not have an adverse impact on amenity.

The EIS identified that the majority of construction work will be done between 7.00am and 7.00pm Monday to Saturday, however some construction work may need to be done outside of these hours. The EIS identified that many of these activities would comply with the noise criteria of 45dB(A)L_{eq} or 60dB(A)L_{max}.

As the noise assessment suggested that the most noisy activities will occur during standard construction hours, it is expected that most periods of construction activity will comply with the construction noise requirements of the Noise EPP.

The noise assessment included a list of potential construction noise and vibration management measures (Appendix N Table 10) and a recommendation for the preparation and implementation of a Construction Noise and Vibration Management Plan, prior to the commencement of any construction works, which includes, as a minimum, measures as outlined in the Table. This is considered acceptable and is supported in principle.

Recognising the sensitivity of farmed abalone to night time noise, notwithstanding that construction activities at night may comply with the Noise EPP criteria, it is recommended that construction does not occur outside the hours of 7.00pm to 7.00am. If night time construction activity is sought, specific details along with proposed additional mitigation measures will need to be considered at that time.

Operation
During operations, the following activities have the potential to cause noise impacts: timber handling machinery and equipment, haulage truck movements, diesel generators and ship movements.

The relevant Noise EPP criteria for the operational phase of the project was determined to be the Rural Living criteria. The noise criteria are based upon the desired amenity level for an area as set by Council zoning. In this case it is not reflective of the established land uses and operations in the area.

The EPA also advised that whilst flexibility is allowed for assessment purposes in the use of Clause 20(6) of the Noise EPP, which allows consideration of actual land uses, the onus is on the proponent to outline why the flexibility should be allowed and this has not been done to the EPA's satisfaction.

Based on the Rural Living zoning criteria, the Indicative Noise Level (INL) includes a daytime criterion at residential receivers of an average of 47dB(A)$L_{eq,}$ a night time criteria of an average noise level of 40dB(A)L_{eq} and a maximum instantaneous noise level of 60dB(A)L_{max}.

In relation to the adjoining and closer Yumbah facility the EPA advised of the following applicable noise criteria:

(a) 42dB(A) Leq between the hours of 7.00am and 10.00pm when measured and adjusted
(b) 35dB(A) Leq between the hours of 10.00pm and 7.00am when measured and adjusted
(c) 60dB(A) Lmax between the hours of 10.00pm and 7.00am when measured.

The environmental noise impact assessment undertaken by the proponent took into consideration baseline noise levels measured at and around the subject site in December 2017. Measured baseline noise levels were relatively low at all measured locations, particularly at night, and were considered consistent with expected noise levels in a rural area[136].

Operational noise emissions were modelled based upon both daytime and night time operating scenarios. Modelling took into account attenuation of noise due to distance, barrier effects from buildings, topography, air absorption, ground effects and worst-case meteorological conditions[137].

The assessment identified that without mitigation, terrestrial noise emissions are expected to comply with the applicable daytime and night time criteria at residential properties with the exception of a 2dB exceedance of the night time criterion at one location (the residence 500m south-west of the site).

The assessment also identified that noise levels expected to be experienced at the Yumbah facility were non-compliant with the INL determined by the Noise EPP with predicted noise levels of 53dB(A)L_{eq} at the facades of the nearest buildings within the site and 45dB(A)L_{eq} at buildings in the centre of the site.

[136] EIS Chapter 18, p405 and Appendix N

[137] EIS Appendix N, p1 and 18

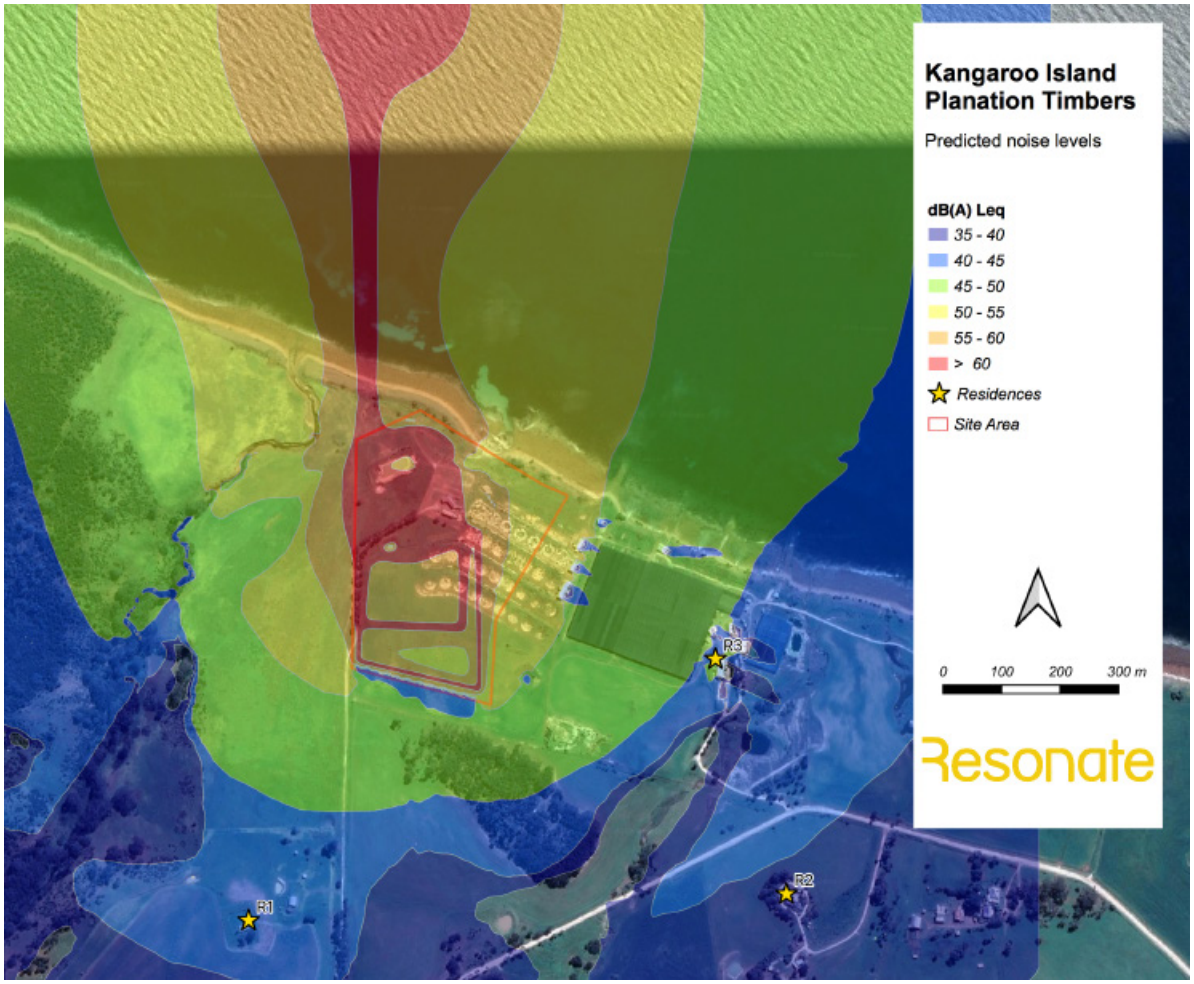


Figure 27: Predicted noise levels (terrestrial) during operation of the proposed facility (Response Document Appendix H Figure 1)

The noise assessment undertaken by the proponent stated that 'there is no established special need for quiet at the Yumbah site.'[138]

Yumbah raised concern regarding these claims and that the claim for 'no special need for quiet' at the Yumbah site shows a misunderstanding of the operational requirements for farmed abalone.

The proponent advised that noise source information described in the EIS for the similar Yumbah Nyamat Abalone Farm, located in Victoria, predicts that local noise sources associated with water pumping infrastructure (pumps and pipes) will result in noise levels at the Yumbah Smith Bay site of between 40-50 dB(A)L_{eq}.
The proponent took the view that given the EIS modelling predicted that operation of the proposal would result in internal noise levels of 43dB(A)L_{eq} or less in all buildings within the Yumbah Aquaculture site, this would effectively render noise from the proposed port development inaudible within the working areas of the Yumbah Aquaculture facility. On this basis, the proponent reiterated that there would be no anticipated adverse noise impact on Yumbah's activities or personnel as a result of the proposed port and that the facility does not have a special need for quiet compared to other industrial of primary production type activities.

[138] EIS Appendix N, p21

The EPA advised that comparison with a third site cannot be considered for assessment purposes as it is not directly relevant to the subject site.

The proponent responded that while the predicted noise levels were assessed against the Rural Living criteria, an exceedance of these limits at the Yumbah site does not necessarily mean there would be a noise impact based upon the current land use at that site. The proponent further advised that although the proposal is expected to exceed the noise thresholds at the Yumbah facility, this will not result in actual or potential environmental harm as predicted noise levels were based on a modelled scenario with all sources operating simultaneously under worst case meteorological conditions.

The EPA advised that it is required to undertake a precautionary approach to the assessment of risk of environmental harm and that although the proponent is correct in stating that exceedance of the Noise EPP does not automatically indicate that environmental harm will result, for the purposes of the *Environment Protection Act 1993,* environmental harm includes environmental nuisance and includes potential and actual harm.

The General Environmental Duty of that Act specifies that 'a person must not undertake an activity that pollutes, or might pollute, the environment unless the person talks all reasonable and practical measures to prevent or minimise any resulting environmental harm'. Given that noise levels are expected to exceed the relevant daytime and night time criteria at the Yumbah facility, the proponent is required to demonstrate that the General Environmental Duty has been met. The EPA advised that it is not satisfied that the proponent has demonstrated that they have met the General Environmental Duty.

In its submission the EPA also advised:
Cl.20(6) of the *Environment Protection (Noise) Policy 2007* states that if the predicted noise levels exceed the relevant levels prescribed in subclause (3) or (4) then the Authority must have regard to the matters listed in Cl.20(6)(a)-(f) in determining its response.
As such, the EPA requested more information be provided to comprehensively address clause 20(6)(a)-(f) of the Noise Policy.

Key components of the proponent's response (summarised) included:

- Predicted noise levels at the Yumbah facility that exceed the daytime and night time criteria are assumed to be at office buildings or buildings used for storage, and these noise levels are based upon a scenario with potential noise sources of operating simultaneously under worst-case meteorological conditions, and actual noise levels are therefore expected to be significantly lower for the majority of the time
- Internal noise levels of 43dB(A)L_{eq} or less are expected in all buildings within the Yumbah facility (accounting for windows and wall attenuation)
- The predicted noise level at the Yumbah facility is similar to the average ambient noise levels (measured at the nearest noise logger location) and that noise from waves is likely to be higher than that predicted as a result of the proposed development
- There is no special need for quiet at the facility
- Exceedance of noise criteria does not entail an adverse impact or environmental harm.

The EPA advised it was not satisfied with the proponent's response as it was incorrect in a number of places and based upon assumptions. The EPA had previously advised the proponent that unless it could verify the specific use of any buildings onsite, on a precautionary basis they would have to be assumed to be places of work, and relevant places for the purposes of noise measurement and prediction. The EPA also advised that the comparison to ambient noise of waves and at the Yumbah

facility with the predicted noise resulting from the proposed development is vague and not a strong comparison.

To further mitigate the noise emission, Resonate recommended the construction of a 3m high noise barrier to the south of the woodchip stacking plant and a restricted operating area for log handlers during night time hours. With these measures, the assessment predicted that noise emissions will comply with night time criteria at residential sensitive receivers[139]. Given the location of the recommended barrier, this would mitigate impacts for the residential sensitive receivers, but provide no beneficial impact for the Yumbah facility.

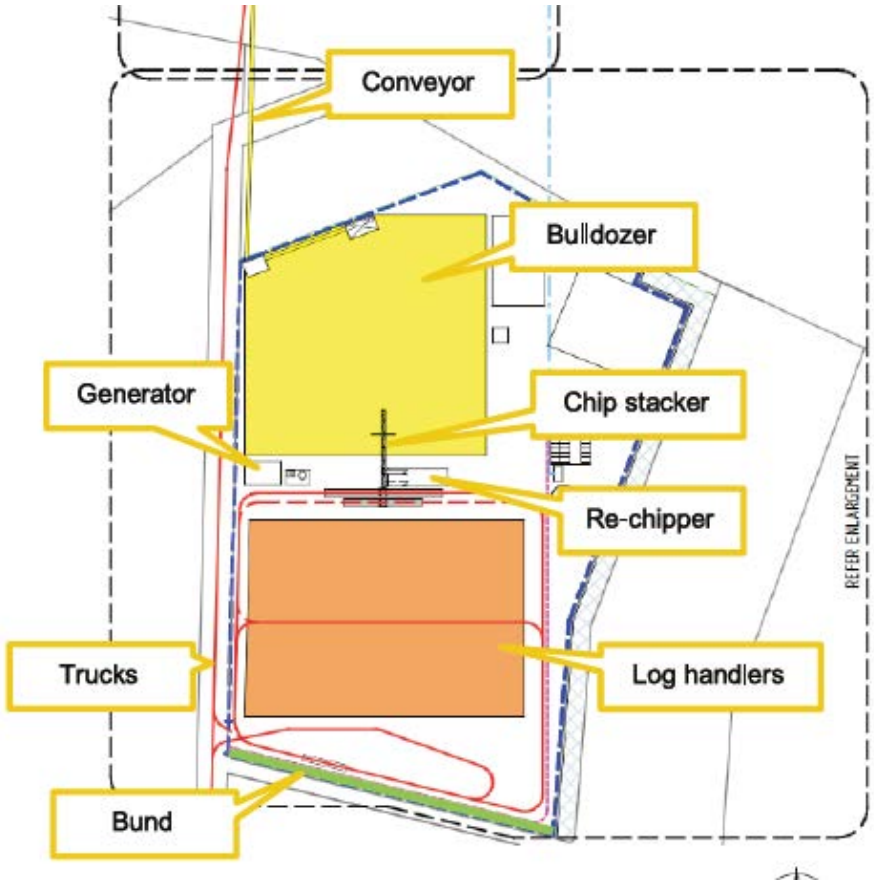


Figure 28: Overall site layout (showing noise sources) and proposed bund along southern boundary (note: re-chipper is no longer proposed, this component was removed after the original noise modelling was conducted) (EIS Appendix N, Figure 4)

[139] EIS Appendix N

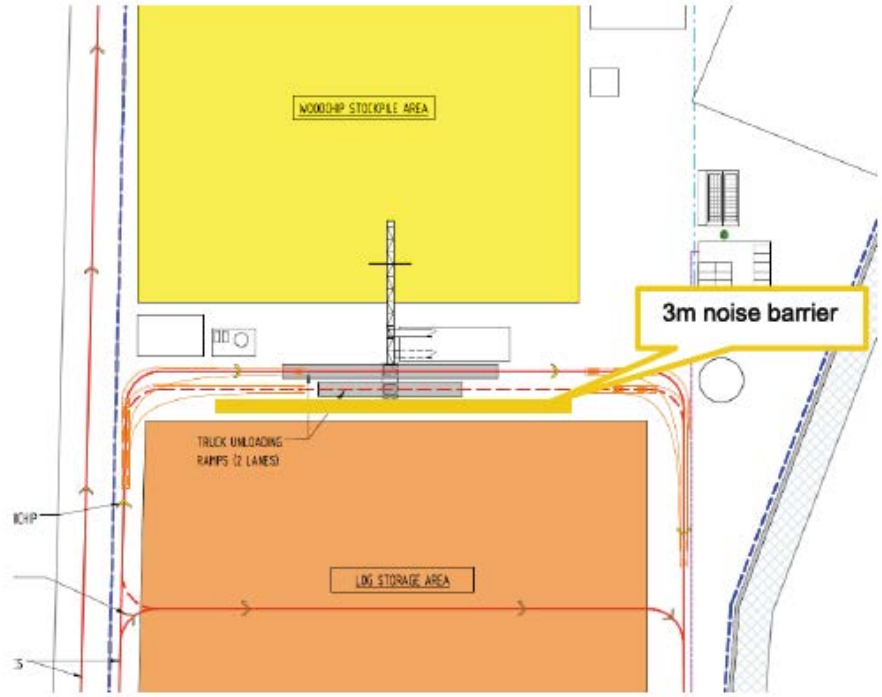


Figure 29: Recommended (Resonate) additional noise barrier (EIS Appendix N Figure 6)

The proponent also identified that additional noise mitigation measures have been modelled, including a noise barrier or bund up to 4m high along the eastern site boundary (i.e. adjacent Yumbah facility). This modelling predicted a noise level reduction of 5dB at the nearest shed at the Yumbah site, however the reduction in noise levels throughout the remainder of the Yumbah site is expected to be less than 1dB, and as such the proponent stated that this mitigation is not considered practicable.

The EPA advised that stating that a noise barrier has been discounted because it provides more protection at the closest buildings where the noise level is worse than at buildings further away where the noise level is lower, is not satisfactory. The EPA requested that the financial element of noise mitigation options be provided to assist in determining whether any particular action is feasible or not. This was not provided by the proponent. The EPA also advised that examining a single option (particularly a large and expensive option) is not sufficient to disqualify taking any action at all. The EPA requested that other options be considered by the proponent.

The proponent has committed to investigate further mitigation options at, or near, the source(s) of noise as part of the detailed design in liaison with the EPA, however has not provided the additional information requested.

Notwithstanding the EPA's advice that the General Duty has not been met for daytime noise at the Yumbah site, nor sufficient rational provided to discount it, the following established factors are considered pertinent in a determination that the inability to meet the established noise level criteria is not a threshold issue:

- Rural Living criteria is set by Council zoning, not actual land use
- Although the Rural Living criteria apply (based upon the Council zoning), both activities (i.e. Yumbah operations and that associated with the proposal) are not Rural Living activities but industrial activities, and as such, the assessment criteria do not reflect the actual use and proposed use of these sites.

- The noise associated with the operation and the proposed mitigation measures, is within the criteria at established residential receivers
- The EPA has advised that the Yumbah facility is not considered a noise sensitive receiver for the purpose of night time hours
- There are additional measures the proponent could undertake, and which are capable of being conditioned, to further mitigate noise impacts, which could be explored through detailed design and as part of a Noise and Vibration Management Plan, including the construction of the 2 bunds/noise barriers along the southern and eastern boundaries.

Although the General Environmental Duty has not been met in relation to noise at the Yumbah site, the EPA has subsequently advised that it considers the risk to human health associated with noise impacts to be low, and if approved, outstanding noise issues could be dealt with in the final design of the facility with appropriate noise mitigation measures implemented through a Noise and Vibration Management Plan, prepared in consultation with, and to the reasonable satisfaction of, the EPA. In addition, if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Noise impact issues during the operational stage will be covered by the EPA licence.

It is noted also that the 2nd Addendum also identified a new route to the subject site, that goes directly past Yumbah Aquaculture (along North Coast Road approaching form the east). The 2nd Addendum did not contain any specific information on the predicted increase in noise as a result of the altered transport route or potential impacts on the Yumbah facility. It did propose that hours of haulage be reduced to 6.00am to 6.00pm, and that 'the best option to mitigate the impacts associated with using the unsealed section of North Coast Road is to seal this section'[140]. The proponent also indicated that they are willing to make a contribution towards the cost of sealing this road[141], although the actual cost and proposed contribution has not been identified.

The sealing of this section of North Coast Road, to minimise noise (and dust) impacts from the new route on Yumbah's grow-out tanks and operations, is recommended.

A summary of the impacts on Yumbah are discussed in further detail at 5.5.1.

The AR concludes that the operational noise impacts on nearby residential noise receivers comply with the Noise EPP, however operational noise impacts at the adjacent aquaculture facility do not comply with the Noise EPP (for Rural Living).

In these circumstances a more detailed assessment against the General Environmental Duty under the *Environment Protection Act 1993* is required. The proponent has not been able to demonstrate, to the EPA's satisfaction, that the General Duty has been met. However, when having regard to existing land use arrangements, the nature of the noise to be generated at the facility, and the opportunity for further noise abatement, there are cogent reasons for arriving at the view that failure to meet the General Environmental Duty is not a threshold issue in relation to the approval of the application. The Environment Protection Authority supports this position.

If approved, the proponent will be required to develop and implement a Noise and Vibration Management Plan (including the construction of two bunds and noise barriers along the southern and eastern boundaries) prepared in consultation with, and to the satisfaction of, the Environment Protection Authority. In addition, if approved, the proponent must obtain a licence under the

[140] Second Addendum, section 2.5.3

[141] Second Addendum, section 2.2

Environment Protection Act 1993 **before the facility is able to operate. Noise impact issues during the operational stage will be covered by the EPA licence.**

Recognising that abalone are night feeders, it is recommended that as a condition of any planning approval no construction occurs outside the hours of 7.00am and 7.00pm.

Marine

More details on noise impacts on marine fauna is contained in section 5.4.4.2.

The most significant underwater noise sources associated with the construction and operation of the proposed facility are piling activities and shipping movements. Potential impacts to marine species include behavioural change, temporary threshold shift in hearing, permanent threshold shift in hearing, and organ damage.

The *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* and the EPBC Policy Statement 2.1 are the primary regulatory controls related to marine noise and impacts on marine fauna. Additionally, the Department for Planning, Transport and Infrastructure prepared the *Underwater Piling Noise Guidelines (2012)* to provide a framework for its staff and contractors to determine practicable mitigation measures that minimise impacts to marine fauna in the vicinity of piling activity.

The marine noise risk assessment adopted criteria based on *National Oceanic Atmospheric Administration's Marine Fauna Acoustic Technical Guidance (2018*) and the *Sound Exposure Guidelines for Fishes and Sea Turtles (2014),* as the consultant considered that these guidelines represented the most up to date research and approach for the relevant species identified as potentially at risk for this proposal and are more stringent than the *Underwater Piling Noise Guidelines (2012*).

The marine assessment was reviewed to consider the revised design, which potentially would extend the duration of the noise impact due to the increase number of piles required.

A marine noise risk assessment was conducted based upon:

- the existing conditions (ambient noise environment, local bathymetry, wave and wind climate)
- the marine species of significance present (or known to be present) in the study area
- the significance of the area as habitat for marine species
- the sensitivity to sound of marine species
- the characteristics of the identified noise sources in terms of duration, source level and frequency content
- the sound propagation characteristics of the marine study area.

As identified previously (at section 5.4.4.2), piling activities during construction may cause temporary or permanent hearing damage to marine fauna (refer Figure 32 below).

	Organ damage	Permanent hearing damage	Temporary hearing damage
Whales	–	900 m (piling)	6.5 km (piling) 10 m (vessels)
Seals/Sea lions	–	–	110 m (piling) 25 m (dredging)
Great white shark	6 m (piling)	6 m (piling)	680 m (piling) 100 m (dredging/vessels)
Turtles	20 m (piling)	100 m (piling)	100 m (piling) 100 m (dredging/vessels)

Figure 30: Distances at which noise may impact marine fauna (EIS Table 12-4)

The EIS assessment identified that without mitigation, the overall risk of adverse noise effects on the relevant marine species is low except for a medium level of risk associated with impact piling potentially resulting in temporary stress in Southern right whales. The 1st Addendum identified that this assessment remains valid with the revised design as the results of the piling noise impact presented remain relevant as they relate to the distances from the actual piling operation and are independent of the jetty structure itself[142].

The 1st Addendum recognised that the use of two piling rigs would reduce the total duration of piling and increase the possibility of undertaking the piling outside the whale migration season. However, should piling operations be undertaken in two locations simultaneously, it would effectively double the number of blows per minute per day which would increase the cumulative sound exposure level (SEL) and increase the threshold distances by approximately 1.6 times.

In its submission on the 1st Addendum, the EPA advised that shortening the piling period by using two piling rigs could result in a more effective risk mitigation strategy than restricting the total piles/blows per day (i.e. from one rig), which would extend the duration of piling activity.

In its response, the proponent recognised that the use of two piling rigs would assist in avoiding the period when cetaceans are likely to be present and that it is open to the idea of using two rigs, however such use would depend on the availability of rigs. The EPA acknowledged the practicality that may be associated with the proponent's ability to access multiple rigs at the same time and advised that it was satisfied that the final method is yet to be determined, however the final method, once determined, must be articulated in the Construction Environmental Management Plan and demonstrate that it will mitigate risks to marine fauna, in particular the Southern right whale.

It is noted that construction noise is temporary, however operational noises will emit noise over the life of the proposal, and as such may significantly add to the existing ambient underwater noise of the area. To adequately consider the impact of operational marine noise, the proponent undertook an assessment study to identify the ambient noise within Smith Bay.

The information from that assessment is included in the EIS. It identified that the source level of noise from boats modelled was chosen to represent the upper range of expected vessels. The EIS identified that a 'worst-case' scenario would include up to 10 vessel movements a day during peak times during construction, with the majority of these being smaller boats. Operational vessel noise in the bay is expected to be infrequent (with 10 to 20 vessel movements per year) and of relatively short duration during docking operations. Based upon this, predicted noise levels are significantly below temporary

[142] First Addendum Section 4.8, p22

hearing impairment thresholds for the relevant species, and at distances beyond 5km, predicted noise levels are in the same order of magnitude as existing ambient levels[143].

Figure 31: Baseline underwater noise measurement location (EIS Figure 18-5)

The assessment concluded that piling is the proposal's highest impact activity in terms of marine noise exposure and identified potential noise mitigation strategies (including use of alternative piling methods, soft start of piling, avoiding night piling, and piling outside the months when cetaceans may be in or near the development area). However these strategies would be implemented only when they did not cause significant delay or extend the duration of piling activities because doing so may increase the risk of exposing marine fauna to high noise level[144].

To avoid noise impacts on marine fauna, it is recommended that piling should be avoided where possible, however, when needed, soft start piling should be used on all occasions of piling and piling should not occur between the hours of sunset and sunrise during the whale migration and calving season (April to November) and the dolphin breeding season (late summer).

The AR recognises that construction noise is temporary, however all measures should be taken to avoid impact on marine species.

The AR concludes that with appropriate combination of mitigation strategies in place, including no night time piling during the whale migration and calving season and the dolphin breeding season, and the use of the soft start approach for all piling activity, the impacts from underwater noise associated with construction and operation are likely to be minimal.

[143] EIS Chapter 18, p419 and Table 18-10

[144] EIS Chapter 18, p 419 and Table 18-12

As identified at section 5.4.4.2, the Commonwealth Department of Agriculture, Water and the Environment requires a Southern Right Whale Management and Monitoring Plan be prepared in consultation with and to the satisfaction of the Commonwealth Minister for the Environment. Requirements of this plan include:

- **ensuring underwater noise does not exceed 183dB re 1µPa2.s**
- **identifying all sources of underwater noise that would be produced and introducing measures to minimise these**
- **ensuring marine piling activities minimise the risk of physical impacts, including temporary threshold shift to whales (i.e. reversible hearing loss).**

The use of two piling rigs as proposed by the proponent is also encouraged to reduce the total duration of piling.

5.4.5.3 Light

Noise and Light - Guideline 12: It is expected that both underwater and terrestrial noise pollution will occur during the construction phase as a result of securing the mooring and retaining structures to the seabed, the use of earthmoving equipment and physical construction of the structures. Post construction, the movement of vehicles to and from the proposed site, stockpiling and ship-loading operations onsite at Smith Bay will also generate noise. If construction and/or operations are to occur at night, there will also be light pollution impacts on the surrounding area.

EIS section 18.5, and 1st Addendum section 4.8 and Addendum Appendix E relate to light impacts.

The EIS identified that it is intended that the proposed facility would, when required, operate 24 hours a day, seven days a week, and as such night lighting would be required to enable site activities to be observed, enable personnel to safely traverse the site, and ensure site security. Emergency lighting would also be required[145].

The EIS stated that the final design and specification of lighting is not yet known, and would be developed during the detailed design phase, noting that while there is some flexibility about where illuminated areas and activities are to be sited, it would be located and oriented where it would have the least effect on existing or potential developments; and that consideration would be given to adding louvres, baffles or shields to control light spill, as well as seeking alternative lighting systems[146].

In its submission on the EIS Yumbah raised concern in relation to lighting impacts on abalone growth and feeding habits. Yumbah advised that abalone are disturbed by light, and as they actively feed at night, any light emitted by the facility may compromise their feeding behaviour and health.

The EPA also raised concern related to the impacts of light spill on abalone feeding rates and the lack of information presented on the EIS regarding this.

An obtrusive lights study was undertaken and included with the Addendum (Appendix E). The study took into consideration the revised design to confirm its compliance with AS4282-1997, although it is noted a new standard was introduced in 2019. This Standard sets the requirements and the relevant light technical parameters to control the obtrusive effects of light and specifically refers to the

[145] EIS Chapter 18, p422

[146] EIS Chapter 18, p424

potentially adverse effects of outdoor lighting on nearby residents, users of adjacent roads, transport signalling system and astronomical observations.

The revised design includes lighting points along the entire length of the extended jetty, along Freeoak Road and throughout the site itself.

Figure 32: Proposed lighting points (First Addendum Appendix E)

Two residences were identified that are within proximity of the proposed development, and whilst not a residence (and therefore not subject to the requirements of the Standard) the adjacent on-land aquaculture facility (Yumbah) was considered a sensitive receiver.

The proposed lighting was modelled at both the same plane as the proposed lighting as well as 30m above the ground plane to conservatively represent the change in topography of the surrounding site

for residences. The Yumbah facility was modelled at the same ground level as the proposed lighting. The study found that the luminous intensities were well below the maximum limits of AS4282. The study also noted that whilst the development was considered to be in a 'Low District Brightness' Zone (sparsely inhabited rural and semi-rural areas) as identified by the Standard, the results would still have been compliant if the Zone was determined to be 'Dark' (relatively uninhabited rural areas with no road lighting).

The study indicated that the proposed lighting system would comply with AS4282 and there would be no adverse effects from light spill on the amenity of surrounding residences or the neighbouring aquaculture facility.

In its response, the proponent advised that as the tanks at the Yumbah facility are not fully covered (they are shaded with mesh to mimic the natural marine light dark cycle at a depth of approximately 5m), there is no need or requirement for complete permanent dark conditions at the site (which is required at other abalone farms operated by Yumbah). The proponent stated that there is no support in the literature for the claims being made by Yumbah that light spill will affect abalone growth and that to the contrary, some literature suggests that light spill may enhance feeding responses if lights of the correct colours (red and orange) are used.

The EPA advised the proponent's response was acceptable, whilst noting also that if approved the final design of light mitigation measures may be more appropriately dealt with by the Department of Primary Industries and Regions, South Australia.

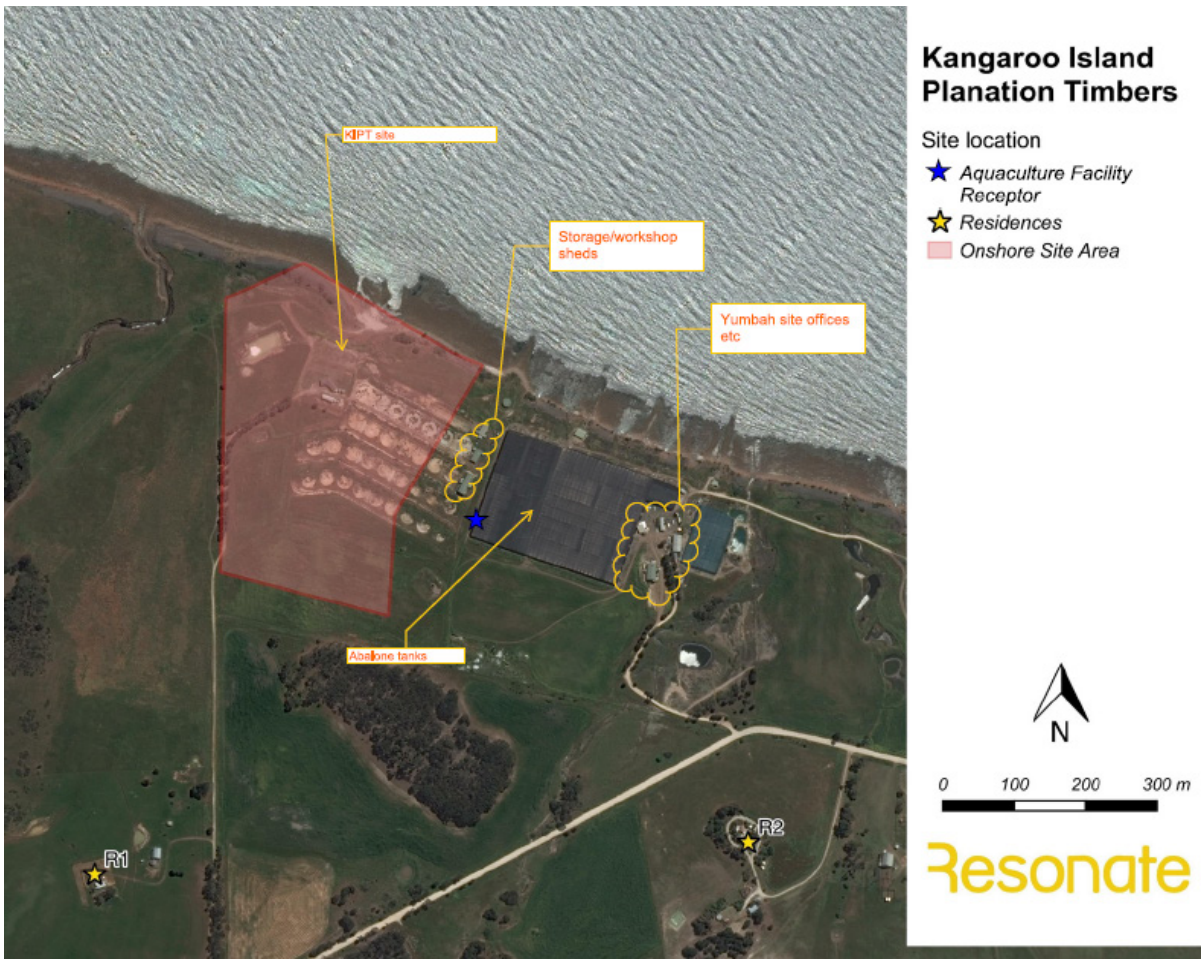


Figure 33: Sensitive receivers (lighting) (First Addendum Appendix E)

The AR concludes that there will be minimal light spill impacts on the two nearby residential properties and notes the proponent's intent to purchase one of these properties if the proposal is approved.

Although the proposed lighting would comply with AS4282, and notwithstanding the lack of support in the literature for the claims that light spill will affect abalone growth or mortality rates, given the fact that abalone actively feed at night, there remains potential risk that light emitted from the proposed development may impact the adjacent aquaculture facility. The AR recommends that all practicable and reasonable measures be undertaken to mitigate and manage light spill on the adjacent aquaculture facility. This may include the use of louvres, baffles, shields, vegetation screening and use of lights with outputs in longer wavelengths. Additional light mitigation measures should be further investigated and developed in consultation with the Environment Protection Authority during the detailed design of the facility and prior to construction.

The AR concludes that, if approved, with further light mitigation measures being adopted in relation to the adjacent aquaculture facility, the impacts of light spill can be successfully managed thorough the implementation of an Operational Environmental Management Plan. The Environment Protection Authority is satisfied with this approach.

Whilst it is recognised that individually, impacts related to dust, noise and light are able to be managed through a suite of management plans, attention needs to be given to cumulative impacts. If the proposal is approved, this needs to be further explored by the proponent, in consultation with and to the reasonable satisfaction of, the Environment Protection Authority, and incorporated into the Operational Environmental Management Plan, prior to operation.

5.4.6 Geology, Soils and Water

Geology and Soils - Guideline 17: The proposal will require the construction of structures on and/or adjacent to coastal geological formation, this may have impacts on those formations and their natural processes.

Site contamination is discussed in detail at section 5.4.7.
Stormwater and surface water management is discussed in detail at section 5.4.8.

EIS Chapter 16 and Appendix L relate to geology, soils and water (ground and surface).
Several submissions raised concern with the impact of dredging on the seabed floor and the potential for the dredged dewatering area to contaminate groundwater at the site. Issues were also raised on the potential impacts of a solid causeway on the foreshore environment.

The amended design removed the need for any dredging and so the previously proposed on-site dredge spoil dewatering areas are no longer required. In addition, the amended design no longer incorporates a solid causeway adjacent the foreshore. Issues previously raised on the original design in relation to these matters are now superfluous.

The EIS undertook an analysis of the geology, topography and soils of the area and subject site. Topography of the site identified elevations dropping towards the coastline from an elevation of approximately 30m down to 1.5m.

Figure 34: Site contour map (EIS Figure 16-9)

The EIS identified that the Smith Bay area generally consists of shallow, seasonal surface water drainage lines with seasonal lagoons. The most significant surface water body in the area is Smith Creek, which lies approximately 100m west of the subject site. It is a seasonal creek that discharges directly into Smith Bay. The western portion of the subject site is within the Smith Creek catchment area and the eastern portion in the Smith Bay catchment area.

The EIS identified that the proposal would not have any impact on the drainage lines or Smith Creek watercourse[147].

[147] EIS Chapter 16, p365

Figure 35: Surface water map (EIS Figure 16-5)

The EIS identified four licensed wells within a 1km radius of the subject site. Three were drilled in 2015 for investigative purposes and have been backfilled. The other is adjacent the eastern boundary and is used as a water well for stock. Investigations of the wells showed a drilled depth range of 20-54m below ground level (equiv. to approximately -19.5 to -44m to AHD) with a depth to ground water of 5m below ground level in one well. The regional groundwater beneath the site is identified as fractured rocks.

Based upon topography and regional groundwater beneath the site, the EIS assumed that groundwater flows north towards Smith Bay. In its submission, the EPA sought clarification as to whether work on groundwater flow had been undertaken. The proponent responded that only one groundwater sample was taken (near the site's northern boundary) as there were no indications of contamination sources on the site, and as such only a background groundwater sample was required. Additional samples were not considered necessary to determine groundwater flow as it is commonly accepted that groundwater will flow toward the sea. EPA noted this response and did not require further clarification.

The EIS identified that groundwater was saline (TDS 18,000mg/L) which indicated it is connected to the marine environment. Recharge into the groundwater was slow, suggesting a low aquifer yield[148]. The EIS identified that there is no intent to use groundwater for any site activities.

[148] EIS Chapter 16, p365

Soil sampling was conducted across 26 locations within the site. The results indicated that the site surface generally consists of a shallow reworked natural layer including various sand and clay mixtures. The underlying soils were generally described as medium-high plasticity clays with various calcareous, silt and sand inclusions. Sandstone gravels and sandstone were encountered at depth. No contamination or coastal acid sulfate soils were detected at the site[149].

Key construction activities that may impact the geology, soils, groundwater or surface water at the site include:

- removal of existing infrastructure (including a disused septic tank)
- bulk earthworks
- cut and fill
- installation of stormwater management infrastructure (retention basin and woodchip leachate management system and basin)
- trenching for installation of services
- construction of buildings.

Operational activities may impact stormwater, which if not adequately managed could impact surface and ground water at the site and potentially discharge to the marine environment. This is discussed in detail at section 5.4.7.

The proposal would require the construction of wide, flat terraces extending southward. The EIS identified that the development would not significantly affect the foreshore and that the overall site would be shaped to integrate with the surrounding topography where it does not increase potential for sediment loading of stormwater runoff[150].

The EIS identified that the facility is designed to ensure stormwater runoff rates should not exceed the rate of discharge from the site that existed pre-development and that erosion and sediment transport are managed. Increased flooding potential on site due to increased impervious surfaces would be managed through an on-site stormwater system designed to cater for 1 in 20 Average Recurrence Interval storm events. The site would be designed to contain and manage all stormwater runoff during construction and operation to eliminate uncontrolled water channelling and concentrated runoff streams, with no site stormwater being discharged to surface water bodies untreated. It also identified that the internal network of open drains, culverts, pipes and wetland will be designed to ensure sufficient carrying capacity with gradients and appropriate controls to prevent bed erosion and damage[151]. Details and requirements of the stormwater system are discussed more at section 5.4.8.

The EIS identified that although no coastal acid sulfate soils had been detected on the subject site, the proponent committed to prepare, as part of the Construction Environment Management Plan, a Coastal Acid Sulfate Soil Management Contingency Plan, should any sulfate soils be unexpectedly found during excavation works[152].

This AR concludes that impacts on the natural topography of the site, due to the cut and fill required, are considered to be minimal and will not result in changes to the geology, soil composition, groundwater and surface water flows or on the catchment area for Smith Creek.

[149] EIS Chapter 16, p363

[150] EIS Chapter 16, p368

[151] EIS Chapter 16, p369-370

[152] EIS Chapter 16, p368

This AR concludes that with adequate stormwater and site contamination risk management, changes to the groundwater and surface water (catchments, composition and rates) at the site as a result of the proposal are considered low.

The amended design has removed the need for any dredging and as a result the in-water elements of the proposal will not alter the contours or geology of the seabed.

5.4.7 Site Contamination (land)

Risks and Hazards - Guideline 14: The Kangaroo Island Development Plan, and the South Australian Planning Strategy promote development, including infrastructure, to be located away from areas that are vulnerable to the risk of hazards for both the protection of human health and the environment. Given the location of the proposed development, the following hazards include, but are not limited to: spills (including oil), flooding, fire (in particular heavy vehicle, timber yard and bushfire), site contamination, storage and movement of hazardous materials and landslip/coastal erosion. All risks and hazards need to be detailed and consideration given to how these risks and hazards will be avoided and managed.

This section discusses potential land contamination (soil, surface water and groundwater). Marine contamination is discussed in section 5.4.2. Onsite chemical storage is also discussed at section 5.8.2.

Soil samples from 26 locations within the subject site were tested for contaminants as part of the investigations that informed the EIS. The results of which indicated that there is no soil contamination at the time of investigation[153].

[153] EIS Chapter 16, p367

Figure 36: Soil sampling locations (EIS Figure 16-7)

Testing of groundwater from 2 locations within the subject site indicated that iron, lead and nitrate concentrations exceed criteria in the Australian and New Zealand Environment Conservation Council (ANZECC) aquaculture and human consumption for saltwater production; and cobalt and copper concentrations exceed the ANZECC aquatic marine ecosystems criteria. No petroleum hydrocarbons were present. Sulphate concentration exceeded the National Health and Medical Research Council (NHMRC) recreation aesthetic criterion[154].

Overall, the results indicated that previous activities at the site have not led to groundwater contamination and all detected concentrations are considered to be at background (naturally occurring) levels for saline water.

The use of the proposed site for storage of timber products and the ongoing movement of heavy vehicles to and from the site has the potential to result in contamination of the soil, surface water and/or groundwater at the site, either directly or through accumulation. It is noted that refuelling of trucks is not proposed at the site, however oil, hydraulic liquids, metallic contaminants and fine rubber particles from trucks and onsite equipment have the potential to be released and/or accumulate resulting in soil, surface and/or groundwater contamination.

[154] EIS Chapter 16, p367

Any chemicals stored on site, such as oil and fuel, have the potential for spills that may result in contamination. It is expected that the risk of spills is low as the importation and storage of bulk fuel (beyond that required for site requirements for permanent equipment) is not proposed, and general industrial site use is not considered a significant contamination source.

The EIS identified that a diesel fuel tank with storage capacity of 20,000L[155] and two generators will be located on site to provide back-up electricity, all of which are to be placed within a concrete bunded area[156]. Refuelling would be through the use of tanker trucks, and will occur within a bunded area[157]. This storage capacity does not exceed the 2000m^3 (which equates to 2ML) limit and as such is not considered 'bulk storage' pursuant to the *Environment Protection Act 1993* or its Regulations. A licence is not required for this storage.

Two aboveground water storage tanks for firefighting purpose will also be fitted with diesel-powered pumps[158]. The EIS is silent on bunding for these pumps but these are considered a low order risk.

Overall, the risk of spills is considered low and can be effectively managed through the development and implementation of an Operational Environmental Management Plan prepared in consultation with the relevant state agencies. A draft plan is provided in Appendix U of the EIS. It is noted that this is a draft for consultation purposes and, if approved, a final plan will be required. The plan should include measures for containment, clean up spills, chemical storage requirements, bunding requirements, and regular maintenance requirements for trucks and onsite equipment. It is noted that, if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Contamination issues during the operational stage will be covered by the EPA licence.

The proposed timber storage areas are uncovered. As such there is a possibility of leachate from timber stored at the site may result in soil, surface water and/or groundwater contamination. Leachate from the storage of timber products is expected to be acidic and contain tannins and lignins, with phenol and natural resins expected to be present. It is noted that no insecticidal fumigation of any of the timber products will take place at Smith Bay.

The EIS identified that to avoid discharge of leachate to surface or groundwater, the woodchips and logs would be stored on impervious surfaces with bunding and stormwater runoff would be directed into a lined retention basin. The EIS identified that this water will either evaporate, be used for dust suppression within the timber storage areas, or irrigate the adjacent landscaping, in which case any residual contaminates will biodegrade[159].

The EPA advised that any irrigation using wastewater must accord with the EPA Guideline Wastewater Irrigation management plans (June 2009 or as amended). The proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Wastewater management during the operational stage will be covered by the licence.

The EIS identified that although no contamination had been detected on the subject site, the proponent committed to prepare, as part of the Construction Environment Management Plan, a Contamination Management Contingency Plan, should any contamination be unexpectedly found during and excavation works. The proponent committed to prepare this plan in accordance with EPA

[155] EIS Chapter 4, p72
[156] EIS Chapter 4, p87
[157] EIS Chapter 4, p72
[158] EIS Chapter 21, p457
[159] EIS Chapter 16, p371

requirements[160]. The proponent also committed to the preparation of a Soil Management Contingency Plan, as part of the Construction Environment Management Plan, to guide specific sampling of surplus soil to determine waste classification and disposal options, should surplus soil require offsite disposal[161].

The AR concludes that risk of soil contamination at the site is low and that should any contamination be found during excavation work it can be adequately managed and mitigated by the development of a Contamination Management Contingency Plan prior to construction that sets out soil contamination containment and management measures. This plan should form part of the Construction Environment Management Plan.

The development of a Soil Management Contingency Plan as a component of the Construction Environment Management Plan is supported to ensure no contaminants are present in any surplus soil that will be removed from the site.

The AR also concludes the risk of soil contamination occurring as a result of activities associated with the proposal is low and that the management and mitigation measures outlined in the EIS for potential contamination are adequate. The AR notes that the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate and that contamination issues during the operational stage will be covered by the licence.

5.4.8 Stormwater and Surface Water Management (land)

Water - Guideline 11: Water availability and use is a critical issue on Kangaroo Island and is fundamental to the livelihood and sustainability of the community and local industry. SA Water supplies reticulated water to some areas on the 'island, however Kangaroo Island is heavily reliant on the capture and reuse of surface water. The proponent should indicate how it is intended to source, reuse and treat water for, and at, the proposed site, to minimise impact on existing water resources and quality.

Marine based stormwater management is discussed in section 5.4.2.
Water supply (including rainwater capture from site buildings and reuse) is discussed in section 6.2.

EIS Chapter 4 and Appendix C3 relates to Stormwater Management and Water Sensitive Urban Design (WSUD)

The EIS identified that the proponent liaised with the EPA to determine the minimum requirements for the proposal, including[162]:

- Ensuring run off rates do not exceed the rate of discharge from the site that existed pre-development
- Adopting these water quality treatment reduction targets:
    - TSS 80% / Phosphorous 60% / Nitrogen 45%
    - Retention of litter greater than 50mm for flows up to a 3 month ARI[163] peak flow
    - No visible oils for flows up to a 3-month ARI peak flow
    - No discharge of organically loaded stormwater to the environment
    - Management and interception of oils, grease from operations, including both onshore and offshore operations

[160] EIS Chapter 16, p368
[161] EIS Chapter 16, p369
[162] EIS Chapter 4, p72 and Appendix C3 Section 1.3
[163] Average Recurrence Interval

    - Interception and trapping of wood chips prior to any discharge of stormwater from onshore and offshore operations
    - Adoption of the treatment train approach to stormwater management
- Complying with the requirements of the *Environment Protection Policy (Water Quality) 2015* listed pollutant concentrations for fresh water environment as the limiting targets (Phosphorous 0.5mg/L, Nitrogen 5mg/L, Suspended Sediment 20mg/L).

The EPA advised that the targets of phosphorous, nitrogen and suspended sediment stated in the EIS are out of date. Rather, the *Environment Protection (Water Quality) Policy 2015* contains a general environmental duty that requires that all reasonable and practicable measures be taken to prevent or minimise environmental harm to waters, including not exceeding the values listed in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000). The values listed include total nitrogen (1 mg/l), total phosphorous (0.1 mg/L) and turbidity (50 NTU). The proponent will be required to meet this general duty of care.

In addition, the EIS identified WSUD considerations that include[164]:

- improving quality of general stormwater runoff and along the stormwater conveyance network leading to a wetland system
- intercepting stormwater runoff from sources where stormwater has come into contact with timber products
- retaining stormwater on site in a retention basin (for onsite re-use – landscape irrigation and/or dust suppression)
- managing the rates of runoff for regular rainfall events through attenuation via green systems
- managing the volume of general site runoff frequent flow events through detention and releasing as trickle flow over 3 days[165]
- utilising stormwater runoff captured in retention basin for onsite irrigation (to maintain healthy landscape buffer), mitigation of dust and hardstand wash-down.

To achieve this, the proponent proposes the following:

General site areas

An ephemeral wetland system is proposed along the eastern area of the site to capture surface water from the land (with the exception of the log and woodchip storage yards). The system will comprise of a densely vegetated unlined basin that will consist of an inlet zone (swale); a macrophyte zone, which is a shallow densely vegetated (reed bed) that will reduce bed gradients, encourage filtration and reduce velocity; and a high flow bypass spillway located at the northern side of the pond to allow for overflow if the basin is full. The spillway and outlet swale will be designed with scour controls (rock pitching) to dissipate stormwater towards the coastal area to prevent erosion downstream[166].

The wetland basin will be unlined to allow infiltration into the underlying soil which means that it is likely to frequently dry out. This approach will allow the storage volume to be more able to manage and retain frequent runoff events from the site.

The system will have surface area of approximately 0.1ha and a total volume of approximately 1ML.

[164] EIS Chapter 4, p72-73

[165] As outlined in EIS Appendix C3 (Stormwater Strategy), p24

[166] Appendix C3, section 5, EIS Chapter 4, p73

Figure 37: Example of a vegetated ephemeral wetland basin with inlet swale (Appendix C3 Figure 5.1)

Timber log and woodchip storage areas

Two hardstand areas measuring approximately 2.4ha each will be used to store logs and woodchips. They will be established with bunding and impermeable bases, and stormwater runoff from these storage areas would be isolated from general stormwater runoff generated from other areas of the site. This will be achieved by grading the hardstands to create a single drainage flow path and providing an upstand to ensure runoff is directed to a single outlet point. At the outlet point of each hardstand area, stormwater would enter a concrete forebay sediment and debris trap. The stormwater will then be directed to a 10ML retention basin (holding pond) which will be poly lined to prevent infiltration and release to the environment. Water held in the basin will be lost through evaporation and also be used to irrigate onsite landscaping and dust suppression. The irrigation system will have a separate filter system to remove sediments and fine debris prior to use[167].

Figure 38: Example of concrete forebays (Appendix C3 Figure 5.4)

[167] EIS Chapter 4, p73 and Appendix C3 section 5.2

Figure 39: Example of lined retention basin (Appendix C3 Figure 5.5)

The EIS Appendix C3 outlined maintenance that would be required to ensure the efficient functioning of the treatment systems. This will include regular checks to see if sediments are trapped or accumulating at inflow points, if litter is present, drainage points are clogged, and to ensure the overall structural integrity of the basins and system[168].

The EPA supported the isolation of the stormwater from the timber storage areas and intent to retain and use on site, however requested further information regarding the sustainable application of wastewater to land (volume, application rates, methods etc.) to ensure it is undertaken in accordance with environmental legislation.

In its response, the proponent provided further detail on how the timber storage area runoff would be separated from general stormwater runoff and confirmed that this isolated water will not be used in pipes or gutters through which stormwater runoff from the reminder of the site is conveyed. As identified in the EIS, the intent is for this water to be used for irrigation and/or dust suppression purposes, however application rates have not yet been determined. The proponent advised that this will be determined during detailed design when additional information is available on soil types, irrigated areas, actual number of irrigation points, type of discharge nozzles, flow monitoring and pump systems. As referred to previously, the EPA advised that any irrigation using wastewater must accord with the *EPA Guideline: Wastewater Irrigation Management Plan* (June 2009 or as amended).

A number of key maintenance activities for the stormwater systems as outlined in Appendix C3 (Stormwater Management Strategy) must be incorporated into the Operational Environmental Management Plan, noting that these would be considered the minimum requirements and that additional maintenance requirements may be required as detailed design of the system progresses.

[168] EIS Appendix C3 Table 5.2

In its submission, the EPA also advised that the lining of the retention pond and the concreting of the timber storage and stockpile areas are supported, however there was not sufficient detail provided to know if the proposed retention pond would meet the design and construction requirements outlined in the EPA guideline *Wastewater lagoon construction (April 2019)* and requested that the proponent provide further information in this regard.

In its response, the proponent provided further detail in relation to the design of the retention pond. The proponent identified that the membrane to be used will be in accordance with Category 3 (which is in line with EPA recommendation of the type of liner to be used over a clay subgrade) and that the final liner types will be determined during the detailed design, including other considerations such as material cover over the liner, desludging access, subgrade preparation and embankment slope. It is expected that all components of the final design be included as part of the Stormwater Management Plan and Soil Erosional and Drainage Management Plan, which must be prepared in consultation with the Environment Protection Authority.

Figure 40: Location of proposed ephemeral wetland (detention basin) and retention basin (EIS Figure 4-3)

The location of the retention and detention basins, along with the proposed landscaping (trees), along the eastern boundary will provide a barrier between the proposal's operational activities and the Yumbah facility.

The EIS also committed to the development of a Soil Erosion and Drainage Management Plan, which will encompass surface water management practices that shall be implemented at the site during the construction phase.

The Stormwater Management Strategy (Appendix C3) identified that the proposed wetland detention pond, retention basin and swale system could be constructed during the early phase of construction to act as sediment capture basins during the major earthworks and civil works construction phases. This will ensure that site-generated runoff will pass through the sediment interception system. Upon

completion of the construction works, these sediment interceptions would be reinstated, made operational and landscaped to meet their ultimate operational function of stormwater treatment[169].

In its submission, the EPA advised that it is not appropriate to use the wetland, which is designed for general site runoff during the operational phase, as a sediment capture device during the construction phase. It advised that the area proposed for these structures could be used as sediment capture zones during construction, however the operational structures of the wetland and retention basin should be completed or rehabilitated at the end of the construction phase to ensure they are operating as per the design for the operational phase.

In its response, the proponent clarified that the location of the proposed operational wetland pond, retention basin and swale system will be partially excavated during the early phase of construction to function as sediment capture basins during the major earthworks and civil works construction phases; and that the operational structures of the wetland and retention basin will be rehabilitated and completed at the end of the construction phase to ensure they are operating as per the design for the operational phase. The EPA advised that this approach is supported and encouraged.

The EPA advised that a Soil Erosion and Drainage Management Plan must be developed that outlines how it is proposed to protect land stability, minimise erosion, rehabilitate and stabilise disturbed land surfaces, and control drainage during construction to prevent sediment and construction pollutants entering the nearshore environment. It should also clearly articulate how the retention basin and wetland basin will be managed if they are to be used for sediment capture during construction and how they will be reinstated for the operational phase. The EPA advised that, if the proposal is approved, the Soil Erosion and Drainage Management Plan must be in place and implemented prior to the commencement of construction. The Soil Erosion and Drainage Management Plan should form part of the broader Stormwater Management Plan.

In its response, the proponent committed to the development of a Soil Erosion and Drainage Management Plan in consultation with relevant authorities.

The EPA requested, that if approved, all key maintenance activities for the stormwater system as outlined in the Stormwater Management Strategy (Appendix C3) are to be referred to and incorporated as a minimum into a Construction Environmental Management Plan and the Operational Environmental Management Plan. In addition, if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Stormwater management during the operational stage will be covered by the EPA licence.

The AR concludes that the stormwater management measures outlined in the EIS are adequate to mitigate potential impacts, maintain natural run off rates and use stormwater as a resource.

Provided the detailed final design retains and incorporates the measures outlined in the concept plan, the proposed measures will prevent high sediment loads, pollutants or high velocity flows from entering the marine environment, cause erosion or impact coastal areas.

The isolation of the stormwater from the timber storage areas and intent to retain and use on site, is supported.

[169] EIS Appendix C3 section 8.2

The AR notes that the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate, and that wastewater management, including any use of wastewater for irrigation purposes, during the operational stage will be covered by the licence.

The AR concludes that, if approved, stormwater can be satisfactorily managed through the development and implementation of a Stormwater Management Plan, including a Soil Erosion and Drainage Management Plan, both prepared in consultation with, and to the reasonable satisfaction of, the Environment Protection Authority; and through the implementation of a Construction Environmental Management Plan. The AR notes that the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate, and that stormwater management during the operational stage will be covered by the licence.

5.4.9 Waste Management (land)

This section discusses onsite waste management. Marine waste is discussed in section 5.4.2. Effluent treatment and disposal is discussed in detail at section 6.3.

EIS Chapter 4 and Appendix U5 relates to Waste Management.

It is noted that there is currently no landfill located on Kangaroo Island and all collected wastes are required to be transported to the mainland for disposal.

The EIS identified that, during construction, waste would be disposed of at the Kangaroo Island Resource Recovery Centre. The EIS identified that 'recyclable construction materials (such as excess cabling, plastics, aluminium and other metals) may be collected and transferred to the Centre for storage before recycling[170].' It is expected that this will occur and commitment to such should be contained in a Waste Management Plan prepared in consultation with the EPA and the Kangaroo Island Council. Inert construction and operation waste is to be transported to the mainland for disposal at licensed landfill facility.

During operation, potential sources of waste associated with the proposal include: wood waste (wood fines, wood shards, bark, errant woodchips), waste from incoming vessels, used equipment, along with personal and putrescible[171] waste from personnel at the site.

The EIS identified that wood fine generation may be up to 700 tonnes/year during soft wood materials handling[172]. Hardwood fine generation has not been identified in the EIS however is expected to be minimal as the majority of the timber product at the site will be softwood.

The EIS identified that any wood fines would be preferentially back-loaded into empty woodchip haulage trucks and returned to the plantations to compost in place and that a portion of the fines may be used as garden mulch in local landscaping[173]. It is expected that this will occur and a commitment to such should be included in the Waste Management Plan.

The EIS indicated that incoming vessels would be responsible for the storage of wastewater and solid wastes on board and that it is not expected that any such waste materials would be brought onshore, and that black and grey water would not be discharged unless any such materials met relevant water

[170] EIS Chapter 4, p90

[171] Solid waste that contains organic matter capable of being decomposed by microorganisms and of such a character and proportion as to cause obnoxious odours and be capable of attracting or providing food for birds or animals.

[172] EIS Chapter 4, p90

[173] EIS Chapter 4, p90

quality standards and biosecurity requirements[174]. It is expected that this commitment will be contained in a Waste Management Plan prepared in consultation with the EPA.

The EIS identified that small volumes of hazardous waste (EPA guideline EPA842/09) will be generated during construction and operation and the EIS contains a table (Table 4-10) that describes how each hazardous waste will be managed, including collection by licensed contractors where required.

The EIS committed to adopt the waste management hierarchy of the South Australia's Waste Strategy (Zero Waste SA 2015) – avoid, reduce, reuse, recycle, recover, treat, dispose[175].

The EIS contained a draft Waste Minimisation Management Plan (Appendix U5). It is noted that the draft plan was prepared for the purpose of public consultation only. A Waste Management Plan will be required to be finalised, in consultation with the EPA and the Kangaroo Island Council, as a condition of any approval, should the proposal be approved.

The draft Waste Management Plan outlined that all waste will be sorted into the categories prior to collection as follows: landfill (including soil, rocks, concrete and tiles); green waste; timber; metals; soft plastics; general waste; paper and cardboard.

The EPA advised that it was satisfied with the proponent's response regarding waste management. The Waste Minimisation and Management Plan must include a commitment that all visiting vessel waste will not be brought onto Kangaroo Island and black/grey water will not be discharged unless any such materials meet relevant water quality standards and biosecurity standards.

The AR recognises that there are limited waste management facilities available on Kangaroo Island with all non-organic waste being required to be transported to the mainland for appropriate disposal.

The AR concludes that construction and operational waste can be satisfactorily managed through the development and implementation of a Waste Management Plan prepared in consultation with, and to the reasonable satisfaction of, the Environment Protection Authority and the Kangaroo Island Council.

The proponent is also encouraged to consult with Green Industries SA in the preparation of the plan. The practices of the waste management hierarchy should be incorporated in the plan.

The plan should include a commitment that all visiting vessel waste is not brought onto the island.

5.5 *Economic Impacts*

Economy - Guideline 4: The proposal is likely to generate jobs on Kangaroo Island, directly and indirectly, during both the construction and operational phases of the proposed development. Given the proximity to the nearby existing aquaculture operation, consideration needs to be given to how the proposed development and use of the port and wharf may impact on the operation of this established business, and how any such impacts will be managed.
As the facility is proposed to be multi-user facility, this may have potential positive impacts on other components of the Kangaroo Island economy.

[174] EIS Chapter 4, p90
[175] EIS Chapter 4, p89

It is expected that, as a result of the December 2019 / January 2020 bushfires the figures presented in the EIS related to economic impacts will change in the short term. It is also acknowledged that as a result of the bushfires the harvesting of timber (in particular the burnt timber), will occur sooner than expected and may be required to be removed from the island via other means (i.e. not through the use of the proposed wharf at Smith Bay). As finer grained details of this and the implications are unknown at the time of assessment, this has not been considered in the Assessment Report and it is considered a temporary deviation from the scenario which was presented in the EIS.

EIS Chapter 20 and Appendix O relates to the Economic Assessment.

The EIS referred to the need for a second rotation for the project to be economically viable in the longer term with potential future rotations beyond this. The then Kangaroo Island Development Plan supported harvesting of the existing timber resources on the island, but did not support any expansion of the industry: 'further expansion of forestry plantations on the Kangaroo Island is not encouraged so as to ensure land is available on a continuous basis for a full range of other primary industries, particularly those capitalising on the Kangaroo Island's 'clean and green' food and wine image and that enrich visitor experiences'.

The economic impacts of the proposal and assessment of such, are based upon harvesting of existing resources only[176].

The EIS included an economic analysis and cost benefit analysis of the proposal undertaken by EconSearch.

The EIS (Appendix O economic analysis) identified that development would involve a total capital investment of approximately $41.2M over a 3 year period of construction, with the operational phase costing approximately $27M per year for the first 13 years.

For the first 5 years of operation, the EIS estimated that the annual average contribution to Kangaroo Island's GRP will be $41.7M ($34.9M direct / $6.8M indirect), along with a further $7.2M in GSP and $4.3M at the national level.

The EIS identified that the proposal will generate an additional 234 ongoing FTE on Kangaroo Island (163 direct / 71 indirect), with a further 20FTE at the state level and 14FTE at the national level. It predicted that, once operational, the proposal will result in household income of $74,000 per FTE job created (Kangaroo Island's current average is $57,900).

The numbers presented in the EIS are considered best case scenario based upon full realisation of the project with timber haulage for 2 rotations. The figures presented would apply to any location on the Island for a facility of this nature and is not exclusive to the Smith Bay site.

The proponent has stated a preference for engaging South Australian based enterprises and, wherever possible, providing employment and opportunities on Kangaroo Island.

A number of submissions questioned the financial viability of the proposal, the viability of the plantation timber industry on Kangaroo Island, the ability for jobs to be filled by existing Kangaroo Island residents and the lack of consideration given to potential job loses that may result should the adjacent aquaculture operation go out of business as a result of the proposal.

[176] Not including any immediate emergency harvesting that may be required as a result of the December 2019 / January 2020 bushfires

The ongoing viability of the timber industry is outside the scope of the planning system and assessment of the proposal. The ongoing operation of the company is also outside the scope of the planning system and assessment of the proposal. If the company ceases to operate or on-sells the development to another company, any approvals and conditions that may apply to the approved development will remain and will be the responsibility of the new owner.

The EIS acknowledged that there will not be enough available labour on the island to fill all the new positions that will be created, and as such many of the jobs will be filled by people not currently living on the island. As a result of the bushfires, Islanders who lost their productive means of employment may be able to take advantage of, or transition to, the new roles created either temporarily or permanently, should the proposal be approved.

A job training or apprenticeship program could be considered to support this development.

The EIS committed to adopting a sustainable harvest regime to avoid the boom-and-bust cycle. This will result in a steady workflow through the year, and from year to year over the entire harvest cycle, creating ongoing, continuous full time employment[177].

The EIS estimated that at least 60 percent of the jobs would be filled by people currently living off the island. If these workers relocate to Kangaroo Island, assuming a South Australian average household size of 2.4 people, the island population's has the potential to increase by 336[178].

The EIS is silent on the potential loss of jobs (25FTE direct) at the adjacent Yumbah facility (discussed at section 5.5.1) and the impacts on the Island's broader tourism industry (discussed at section 5.3.3). Notwithstanding any potential loss, the overall gain in jobs and increase in household income that will result from the proposal, should it reach its full potential and result in multiple rotations, is considered significant for the island.

The AR concludes that whilst the economic impacts of the proposal itself have been quantified the broader impacts on the Island's economy, in particular in relation to the tourism industry, have not been fully explored. Notwithstanding, the proposal is expected to have an overall positive economic impact on the Kangaroo Island economy. The proposal will result in significant additional employment opportunities for Kangaroo Island, both direct ongoing employment associated with the development and add-on opportunities in a range of other industries and services.

The proposal will broaden the island's economic base and provide diversity in employment opportunities in a region that is currently displaying a slow population growth, lower than average incomes and limited /seasonal employment opportunities. This is considered a significant benefit for the region.

The construction and operational job opportunities associated with the proposal may also assist in the economic recovery of the island following the December 2019 / January 2020 bushfires.

The ability to use the facility for other users (subject to other approvals) provides Kangaroo Island with an additional import/export facility that may have positive longer term impacts on the island's economy.

[177] EIS Chapter 20, p442 and 446

[178] EIS Chapter 20, p446

5.5.1 Impacts on the adjacent aquaculture operation (Yumbah)

Potential impacts on Yumbah Aquaculture are discussed throughout the EIS. Chapter 11 and Appendix H specifically relate to land based aquaculture and aquaculture assessment.
Section 4.4 of the 1st Addendum relates to land based aquaculture, with discussion of impacts also covered in the 2nd Addendum.
The assessment of impacts on Yumbah are covered throughout this report. This section also provides a consolidated summary and analysis of these.

Yumbah Aquaculture operates a land-based aquaculture facility immediately east of the Smith Bay site with its intake pipes located within 400m of the proposed wharf. It is a well-established operation that employs 25FTE (direct) on Kangaroo Island with an estimated additional 21FTE indirect jobs. Yumbah's Smith Bay site farms mostly greenlip abalone.

It is noted that the Yumbah facility sources seawater from Smith Bay extending up to 220m into the Bay. This water is pumped from the marine environment and reticulated around the farm. The successful operation of the facility depends upon the provision of an adequate supply of fresh seawater with appropriate quality characteristics (including temperature, salinity and nutrients).

In its submissions on the EIS and Addendum Yumbah's expressed concern that the proposal poses an extreme risk to its operations, in particular due to its immediate proximity.

Key construction and operational effects of the proposal that may directly impact on Yumbah's operations include changes in water quality within Smith Bay; introduction of marine pests and diseases; suspended sediments being drawn onto the intake pipes; dust, noise, light and vibration, and changes in water temperature. These impacts are addressed in detail in the AR in separate chapters: marine environment at section 5.4.2; marine biosecurity at section 5.4.3.1; and emissions (noise, dust, light) at section 5.4.5.

In addition to the potential physical impacts of the proposal, there is the potential for impact on Yumbah's 'clean and green' marketing image. This is of particular importance to its export market.

The EIS stated that there is a low likelihood that the proposal will have any impact on Yumbah's operations, and where there is an impact it can be minimised or mitigated. This conclusion was based upon academic literature and hydrodynamic modelling undertaken as part of the EIS investigations. Yumbah, in its submission, has disputed the modelling and analysis undertaken as being 'based upon incorrect or outdated information' and that it 'demonstrates little understanding of current farming practices'.

The proponent advised that due to their inability to source information directly from Yumbah, the descriptions and analysis of Yumbah's business presented in the EIS was drawn from external observations of the facility, aerial photography, expert opinion and general industry knowledge. The proponent acknowledged that information on abalone aquaculture provided in the EIS may not fully represent Yumbah's operation at Smith Bay, as it is expected that Yumbah would operate with systems that differ in some respects from those described in the EIS. Notwithstanding this, the proponent responded that as the descriptions presented in the EIS are based on direct commercial and research experience with abalone aquaculture facilities around the world, including farms in Australia, Chile, China and Malaysia, that whilst the Yumbah operations may differ in some respects from those elsewhere, there are no fundamental errors in the information provided in the EIS. Given the research and modelling that was undertaken, this is considered an acceptable response.

To gain an understanding of the potential impacts on greenlip abalone, the proponent commissioned a series of targeted ecotoxicology studies (including fine sedimentation and wood dust) on 32 wild juvenile greenlip abalone with sediments taken from Smith Bay. Half the abalone (16) were exposed to the test conditions for 24 hours and observed for 48 hours post exposure, and the other half (16) were used as a control group with no increased exposure to sedimentation. No mortalities were recorded within either the treatment or control group.

The EIS concluded that 'evidence indicates that greenlip abalone have a robust capacity to deal with high levels of suspended sediments in their environment. While larval abalone are vulnerable to elevated levels of suspended sediments, such animals are protected in an aquaculture setting through the use of filtered and sterilized water'[179].

It is acknowledged that this represents a small sample size that was tested for a short duration and did not include consideration of cumulative impacts. It is also acknowledged that the proponent tried to source a larger sample size from various sources around the state and nationally to no avail, so testing could only be undertaken on those abalone that could be successfully sourced from the wild in a short window of meteorological opportunity. With no other scientific literature or data available on greenlip abalone in relation to the potential impacts of suspended sediments, in light of the circumstances, PIRSA and the EPA advised that the testing undertaken was considered to be reasonable. The EPA also acknowledged that there are limitations in applying the results to commercial farming practices, given the sample size and duration of the testing and potential other factors at play (e.g. temperature and stocking densities).

The proposed change in design (as presented in the 1st Addendum) to an open, fully piled jetty extended further offshore with the berth pocket located further away from Yumbah's intake pipes, will not require any dredging (capital or maintenance). Investigations undertaken on the likely impact of the revised design on marine water quality within Smith Bay (Appendix C1 of the Addendum) concluded that piling during construction will have significantly less impact on water quality within Smith Bay compared to dredging. The revised assessment concluded that it is likely that the effects on seawater quality at Yumbah's seawater intakes would be indistinguishable from natural variation[180].

It is considered that the design change is a significant improvement from the original design as overall it will result in less impacts on Yumbah's operations. In addition to the removal of all dredging activity, and the associated suspended particles that may have otherwise affected Yumbah's operations, it is expected that the increase in distance away from Yumbah's intake pipes (of up to 250m), will result in a decrease of any silt or mobilised sediments as a result of shipping movements (i.e. berthing and manoeuvring).

The capacity for the proposal to result in increased dust generated by onshore construction activities and woodchip dust, along with that generated from traffic to and from the site, and its deposition on the shade cloth over the grow out tanks for the abalone, has also been raised. Yumbah raised concern that dust deposited will change the calibrated light filtration, and following a rain event, will enter the tanks resulting in increased suspended sediment loads or act as a source of leachates which may have a toxic effect on the abalone.

As identified previously in the AR, the proponent undertook air quality modelling (refer 5.4.5.1) for both the construction and operational phases which indicated that the compliance criteria are likely to be achieved within the site boundary for the construction phase and within the immediate vicinity

[179] EIS Chapter 11, p218 and 227

[180] First Addendum Section 4.2.3, p15

for the site boundary during operations with only slight increases in the ground-level concentration of pollutants, all of which comply with the relevant air quality criterion[181].

The EPA advised that it was satisfied with the criteria used as the basis for the modelling and the methodology of the assessment was acceptable.

The ecotoxicology testing undertaken included testing for wood dust (from *Eucalyptus globulus*, the main forestry species on Kangaroo Island) and identified that when dust enters the tanks, it takes approximately 2 hours for the wood dust to go into suspension. This well exceeds the typical retention time of water on the farm which is approximately 20 to 30 minutes. This means that any wood dust would float on the surface of the water and thus flow out of the farm long before it went into suspension.

The proponent also advised that rainfall events that might cause the wash through of deposited dust typically occur less than 9 days per year and as such, the dust fall though will be episodic and not an ongoing problem.

The EIS concluded (and was reiterated in the 1st Response Document) that the small increase in the rate of dust deposition on the Yumbah facility as a result of the proposed development would have a marginal effect on water quality within the farm and would likely have no effect on the health of abalone[182].

As discussed previously, based upon advice from the Environment Protection Authority, that it was satisfied with the proposed mitigation measures and that it is expected that dust deposition will be within acceptable limits and will not have a material effect on water quality at the Yumbah facility. Notwithstanding the results, given the sensitivity of the farmed abalone to dust, all practicable measures should be taken by the proponent to minimise dust deposition and any longer-term build up at the Yumbah site. This should be included in an Air Quality and Dust Management Plan, prepared in consultation with, and to the reasonable satisfaction of, the Environment Protection Agency. The EPA advised that impacts of dust on abalone will require input from a marine biologist with the requisite expertise in abalone, as this area of expertise is not available within the EPA in relation to air quality. The Air Quality and Dust Management Plan must include a visual dust log/recording, real-time dust monitoring at the site boundary (adjacent to Yumbah Aquaculture) to monitor dust deposition rates and include protocols for when works may need to cease or be modified.

As identified at section 5.4.5.3, an obtrusive light study was also undertaken as part of the 1st Addendum, which included Yumbah as a sensitive receiver. Results of this study concluded that the proposed lighting would comply with AS4282 and that there would be no adverse effects from light spill on the amenity of surrounding residences or Yumbah Aquaculture.

In its submissions Yumbah raised concern in relation to lighting impacts on abalone growth and feeding habits, advising that abalone are disturbed by night time light and that any light emitted by the facility will compromise their feeding behaviour and health and stated that although the predicted light levels may be acceptable for residential purposes it does not relate to optimal lighting for the cultivation of abalone.

As identified previously in the AR the proponent responded that there is no support in the literature that light spill will affect abalone growth or mortality rates, and to the contrary, some literature

[181] EIS Chapter 17, p391

[182] EIS Chapter 11, p223

suggests that if lights of the correct colours (red and orange) are used, there is a capacity to enhance feeding responses.

Potential light impacts from wharf operations can be mitigated with standard light baffles and strategically placed screening vegetation to minimise light spill on the abalone farm. The proponent also committed that the use of security lights, where possible, would operate in infra-red and therefore not have a risk of light spill. In addition, the proponent has committed to placing a barrier fence around the permitter of the land-based part of the proposed facility with at least 90% shade-cloth to further limit the light spill from ground-based operations. With this mitigation measure, it is estimated that, coupled with the existing 70% shade cloth over Yumbah tanks, this will result in a 97% reduction in incidental light spill.

The EPA advised it was satisfied with the proponent's response in relation to light spill, subject to the proponent implementing the mitigation measures as proposed.

In relation to potential noise impacts, as identified previously (at section 5.4.5.2), a noise impact assessment was undertaken by the proponent. This assessment identified that without mitigation, operational noise at some locations would not comply with the criteria of the Noise EPP.

Whilst some of the facilities at the Yumbah site (such as the hatchery) are enclosed within buildings, the nursery tank system and raceways (where the adults are grown-out) are only covered by shade cloth. The proponent had based noise modelling on buildings (sheds and/ or office buildings) at that site and not the abalone growing areas. The modelling, and the proponent's response, did not specifically address that the majority of the abalone facility is not contained within a building.

To manage noise and the potential impact ion Yumbah's operation a Noise and Vibration Management Plan, prepared in consultation with, and to the reasonable satisfaction of, the EPA, is proposed. In addition, if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Noise impact issues during the operational stage will be covered by the EPA licence.

It is noted that, as outlined in the 2nd Addendum, the traffic route servicing the Smith Bay site will now approach the site along North Coast Road from the east, resulting in all haulage trucks driving directly past the Yumbah facility. Hours of haulage are also proposed to be reduced to 6.00am to 6.00pm, and will be the subject to a Traffic Management Plan.

The 2nd Addendum identifies that 'the best option to mitigate the impacts associated with using the unsealed section of North Coast Road is to seal this section'[183]. The proponent also indicates that they are willing to make a contribution towards the cost of sealing this road[184], although the actual cost and proposed contribution has not been identified.

To ensure noise, dust and vibration impacts from the new route are minimised on Yumbah's grow-out tanks and operations, sealing of this section of North Coast Road is recommended. If approved, a Road and Traffic Management Plan that fully details the required road and infrastructure upgrades and a Road Infrastructure Agreement (with the road authorities) that identifies the funding arrangements will be required.

The potential introduction of pest species and disease is a risk to Yumbah's operations. The EIS identified the following significant diseases for abalone and oysters on Kangaroo Island:

[183] Second Addendum, section 2.5.3

[184] Second Addendum, section 2.2

- abalone viral ganglioneuris (currently detected in wild abalone in Victoria and Tasmania, but not in South Australia)
- the parasitic Perkinsus (already present in wild abalone in South Australia)
- Pacific oyster mortality syndrome (detected in feral oysters in the Port River 2018).[185]

As discussed previously (at section 5.4.3.1) the EIS identified that international vessels would exchange ballast water prior to entering Australian water on the 'high seas' (i.e. at least 200 nautical miles from the nearest Australian land) to reduce the level of risk to the biosecurity of Kangaroo Island[186].

However, in relation to domestic shipping movements, Smith Bay lies within a 'same risk' area which allows uptake and discharge of ballast water within that area. It is recognised that Smith Bay and Port Adelaide are within the same risk area. The waters in and around Port Adelaide have a number of established marine pests and any vessels that come from this port would pose a significant biosecurity risk to Kangaroo Island from the discharge of ballast water as well as from biofouling. PIRSA has advised that ballast water exchange and uptake from Port Adelaide is not supported (both during the construction or operational phase) due to the risk of aquatic pest and disease transfer.

The proponent has committed that tugs from Port Adelaide would not be used, in either construction or operation phases, to mitigate ballast water exchange biosecurity risk. Whilst this commitment is noted, PIRSA has advised that the use of tugs from Port Adelaide is acceptable subject to strict biofouling protection and ballast water biosecurity procedures.

The proponent has committed to the preparation of a Marine Pest Management Plan to address the risk from ballast water and biofouling.[187] This plan would be a condition of any approval and will be required to be prepared in consultation with, and to the reasonable satisfaction of, PIRSA.

Additional pest management measures proposed by the proponent include:

- no abalone or oyster products would be allowed to enter the study area via Freeoak Road or via the port facility
- induction sessions for construction and operational staff would include a component on aquatic diseases, including abalone and oyster diseases
- marine surveillance equipment (boats and diving equipment) used during construction and/or operation would be decontaminated in accordance with standard industry protocols to prevent the spread of any aquatic diseases[188].

The Addendum identified that the design change would increase the separation distance of the berthing area from Yumbah's seawater intake pipes, which should reduce the potential risks associated with marine vessels[189], implying that this also relates to potential marine pests and disease from incoming ships. Notwithstanding the increase in distance, due to the aggressive invasive nature of exotic pests and disease, the risks arising from ballast water and biofouling remain the same.

The redesign also does not ameliorate the potential risk associated with oil spills or other water-based pollutants on Yumbah's facility. As Yumbah sources water from in-sea intake pipes, which is passed through the tanks, if oil, or some other pollutant, impacts the quality of the water sourced via the intake pipes, this will infiltrate through the entire system simultaneously. There is no capacity for the

[185] EIS Chapter 15, p 331

[186] EIS Chapter 15, p341 and 342

[187] EIS Chapter 15, p343

[188] EIS Chapter 15, p345

[189] First Addendum Section 4.7, p 20

aquaculture facility to recirculate the water or stop water flow prior to it entering the tanks, should such an event occur. However, risks associated with oil and chemical spills can be successfully managed through the required EPA licence.

Yumbah also raised an overall concern regarding cumulative impacts of the proposal on its operations. It is clear that the revised design has reduced the potential marine ecology and coastal process impacts, and the upgrade and ongoing maintenance of the road network will also properly deal with traffic and access issues. However it is also clear that careful condition setting and oversight will be required to ensure that in a cumulative sense impacts are managed. To this end an effective and responsive monitoring and compliance framework is essential to ensure that impacts can be appropriately managed.

The AR concludes that, whilst many of the potential impacts associated with water quality have been substantially decreased with the amended design (as per the Addendum), if not managed accordingly, the proposal still has the potential to impact upon operations of the adjacent Yumbah facility.

To ensure dust impacts are minimised, sealing of the identified section of North Coast Road is recommended.

On balance it is considered that the majority of impacts to Yumbah's operations can be managed through the implementation of, and strict adherence to, a suite of Environmental Management Plans, strategies, Environmental Protection Policies and Codes of Practice, and the required EPA licence.

Consideration needs to be given to cumulative impacts and any further measures that may be reasonable and practicable to mitigate them. If the proposal is approved, this needs to be further explored by the proponent in consultation with, and to the reasonable satisfaction of, the Environment Protection Authority, and incorporated into the Operational Environmental Management Plan prior to operation. The establishment of cross-agency governance arrangement (discussed at section 8) will play an important role in ensuring compliance and adherence to these plans and conditions.

5.5.2 Other surrounding businesses

Chapters 20 and 23 of the EIS refer to Molly's Run. Chapter 20 of the EIS refers to other commercial fisheries.

A short-stay hosted bed and breakfast business (Molly's Run) that provides a Mediterranean style 2-storey, 3 Bedroom villa accommodation is located approximately 600m south-east from the proposal site in a slightly elevated position overlooking Smith Bay. The upstairs guest bedrooms have direct views over Smith Bay. This business has been in operation for approximately seven years, and hosts in the vicinity of 1,000 guests per year[190].

[190] Molly's Run submission on the EIS

Figure 41: Satellite image showing proximity of Molly's Run to the proposal

In its submission on the EIS, the owners of Molly's Run raised concerns related to the ability of their business to continue to attract guests due to the following:

- diminished peace and tranquillity with timber haulage trucks continuously driving past the property
- diminished visual amenity (both day and night).

The EIS indicated the intent for the timber haulage trucks to operate 24 hours per day 7 days a week during harvest periods (first rotation 13 years, second rotation 12 years) and that such haulage would occur year-round[191]. Originally, the preferred route identified in the EIS, approached Smith Bay along North Coast Road from the west. The preferred transport route identified in the EIS did not directly pass in front of Molly's Run, turning off approximately 750m to the west of Molly's Run house and approximately 1km from Molly's Run driveway access (refer Figure 44a), and as such would not have had a direct visual impact on this business, however may potentially have had an impact in relation to noise.

The 2nd Addendum has identified an alternate transport route to the Smith Bay site, with haulage trucks to approach the site along North Coast Road from the east, resulting in trucks driving directly past Molly's Run (refer Figure 44b). The 2nd Addendum also identified an amendment to the proposed hours of haulage (6.00am to 6.00pm Monday to Friday, with some potential Saturday haulage) and

[191] EIS Chapter 21, p460

vehicles used (semi-trailers, or HPVs, being either 7-axle or 8-axle truck and dog trailers)[192] . The amount of timber to be harvested remains similar, being 712,000 tonne per annum once fully operationalised. This will result in a truck passing along the specified route every 3.5 to 6 minutes (vehicle dependent). This frequency will increase should further reduced hours of haulage be imposed.

The 2nd Addendum identifies that 'the best option to mitigate the impacts associated with using the unsealed section of North Coast Road is to seal this section'[193]. Sealing this section of the road will assist to mitigate the noise impact associated with the haulage trucks, however it will not remove the visual impact or completely eliminate the noise impact, due to the volume of trucks that will pass by this residence and business.

Figure 42a: Preferred route in context to Molly's Run location

[192] Second Addendum, sections 2.3.2 and 2.3.5

[193] Second Addendum, section 2.5.3

Figure 42b: route identifed in Second Addendum

The EIS proposed the use of landscaping and use of colour (painting all buildings and infrastructure in colours that blend with the natural and surrounding environment) to mitigate some of the visual impacts[194]. The EIS identified that Molly's Run 'is surrounded by shelter trees' and 'more directly overlooks the Yumbah facility'[195]. There are some existing trees on the site of Molly's Run directly to the west of the bed and breakfast accommodation along with some low-level landscaping that provides for partially obscured views of Smith Bay, however due to the elevated nature of the site and scale of the proposal this landscaping is unlikely to completely obscure views of the proposal at the site. The intended use of landscaping by the proponent may assist in partially mitigating the impact at the ground/road level however due to the elevated position of Molly's Run, any such landscaping will be unlikely to completely mitigate the visual impact on this business.

[194] EIS Chapter 6, p116 and 118

[195] EIS Chapter 6, p115

Figure 43: Landscaping around Molly's Run on the western side facing the direction of the proposal *(source: Google Earth)*

Figure 44: View of Smith Bay from Molly's Run. Proposal is located to the left beyond the tree. *(Source: Tripadvisor).*

Figure 45: View of Smith Bay from Molly's Run. Proposal will be to the left beyond this viewpoint (note: green cover of the Yumbah operations can be seen to the left)
(source: Tripadvisor).

It is noted that Molly's Run mostly overlooks the Yumbah facility, however this facility is a lower scale development that does not hinder visual amenity to the same scale as the proposed port and wharf infrastructure. To mitigate the visual impact, landscaping would most likely be required at the site of Molly's Run, however this may impede the sea views from this property.

The amended in-water structure as proposed in the Addendums will not decrease the expected visual impact on Molly's Run as although the ships will be berthed further offshore, the visual impact of the jetty will be increased due to the extended length (as shown in the Appendix F of the 1st Addendum). This would also result in additional lighting impacts with the jetty to be lit at night.

The visual impact of the onshore infrastructure and storage piles will remain the same, as will the noise associated with the operation of the port facility. Although the impact will be slightly greater, it is not considered to be significantly greater.

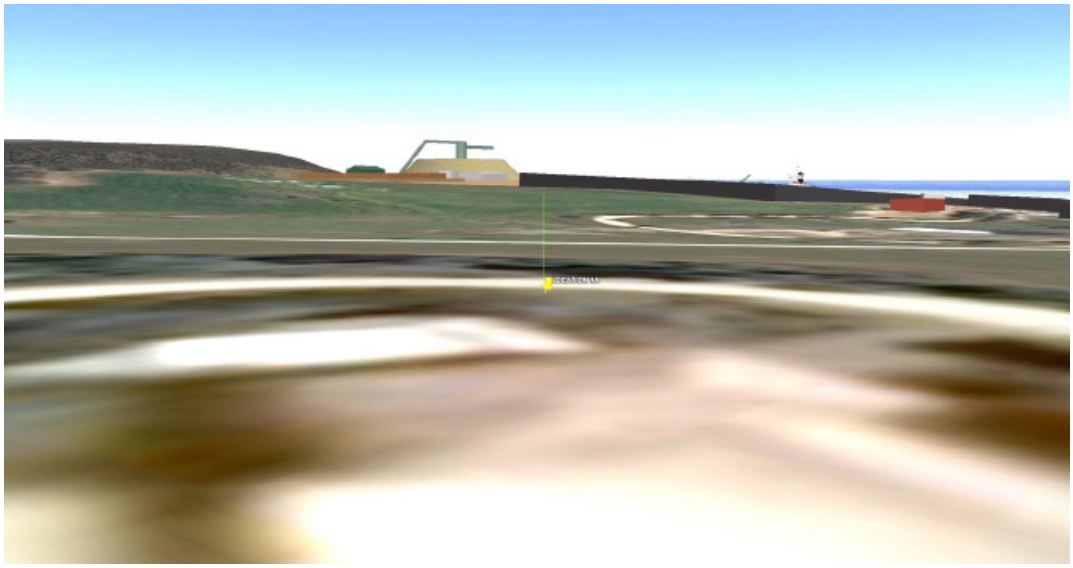


Figure 46a: Modelled 'line of sight' visual impact at Molly's Run – original design (Addendum Appendix F – Figure 2)

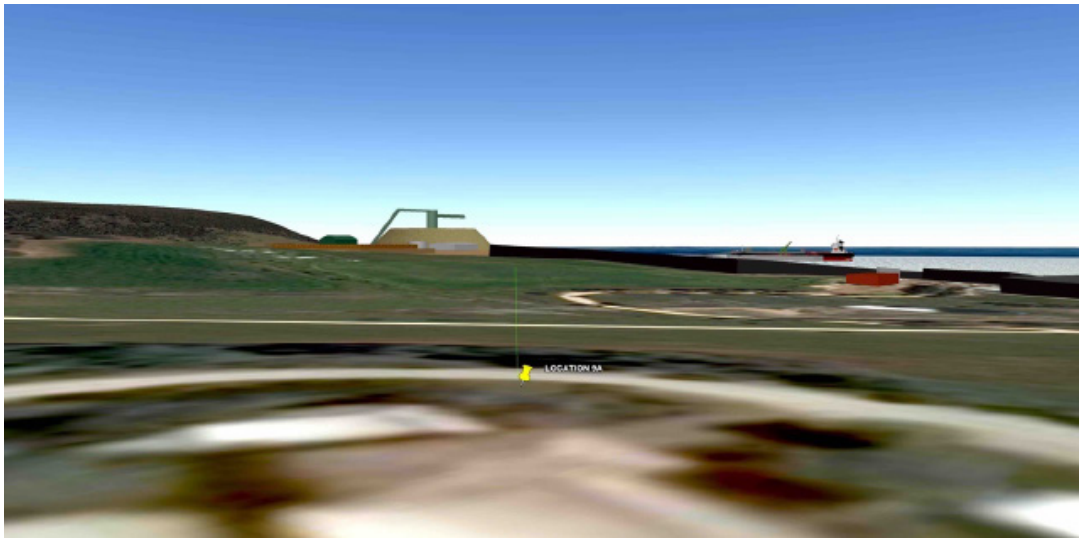


Figure 46b: Modelled 'line of sight' visual impact at Molly's Run – amended design (Addendum Appendix F – Figure 3)

It is expected that vehicle movements and the use of on-site machinery (both during construction and operation) will be sources of noise that will directly impact upon Molly's Run due to the property being located in an existing quiet remote location, slightly elevated and with little in the way to buffer any noise. It is noted that the 2nd Addendum proposes to limit truck haulage hours to mostly Monday to Friday during the day, with some Saturday haulage as needed, however many tourists visit the island during the week and the business and owners will be directly affected.

The EIS recognised that 'Construction noise with an adverse impact on amenity is defined as that which results in a noise level greater than 45 dB(A) Leq (continuous level) or 60 dB(A) Lmax (maximum level) at a noise-affected premises such as a residence'. The EIS also stated 'The above provisions recognise that construction is inherently noisy, with limited opportunity for mitigation. However, given the temporary nature and limited duration of construction noise, it is considered acceptable provided it is undertaken within reasonable hours and all reasonable and practicable measures to mitigate noise are implemented.'[196] The EIS also stated 'that the majority of construction will be done between 7.00am and 7.00pm Monday to Saturday'[197]. This construction noise would comply with Division 1 of the Environment Protection (Noise) Policy 2007, notwithstanding it is considered that this would have an impact on the adjacent Bed and Breakfast business. It is noted that the noise impact associated with construction will be temporary.

During the operational phase the continuous nature of the port operations will result in noise levels that are relatively constant across daytime and night-time periods. With respect to the residential noise receivers, the modelling undertaken for the EIS predicted that noise levels associated with the various operational components of the proposal are expected to comply with daytime criteria at all residential receiver locations (with the exception of a slight exceedance of the night-time criteria (by 2 dB) at receiver R1 – which is not Molly's Run); and that the predicted noise levels at the residences are consistent with existing baseline noise levels at these locations.

The EIS stated 'KIPT would seek to minimise noise during the construction phase so amenity at the nearby receivers was not unduly impacted'[198] and outlined a range of standard noise mitigation strategies that will be implemented.

The proponent responded to issues raised in relation to Molly's Run as follows:

- Molly's Run is located immediately opposite Yumbah, which can be seen from its guest quarters.
- The noise from Yumbah can be easily heard at the front door of Molly's Run
- The Yumbah operation has night lighting. The proposed port will add to night lighting of the area however will have lighting directed only onto the site itself
- Vegetation screen plantings, choice of colour and design layout will all be used to minimise any potential visual impacts (and noted that there exists some mature vegetation to the north-west of the residence i.e. the direction of the proposed seaport) that would screen Molly's Run from some of the visual impact of the seaport.

Overall, the proponent is of the view that the proposed facility would not affect the viability of this business.

[196] EIS Chapter 18, p404

[197] EIS Chapter 18, p408

[198] EIS Chapter 18, p410

The owners of Molly's Run did not make a submission on the 2nd Addendum.

The AR concludes that the proposal is likely to have direct visual and noise impacts on the nearby Molly's Run Bed and Breakfast. Landscaping on land owned by the proponent is unlikely to mitigate this. Construction and operational noise impacts will be partially mitigated through the sealing of the unsealed section of North Coast Road and the development of, and strict adherence to, a Noise and Vibration Management Plan (as part of the suite of suite of Environmental Management Plans), however there is unlikely to be overall nil impacts to this business and the overall visitor experience at this establishment is expected to decrease.

The EIS identified that 'two commercial fishers operate in the bay from time to time'. The EIS identified the type and value of these operations as follows: 'One operates in a small southern calamari fishery currently located where the proposed causeway would be built. There is also a small King George whiting fishery in deeper water near the site of the proposed berth. The total value of these activities is believed to be about $40,000 a year'[199].

There is also the potential that some charter fishing vessels visit Smith Bay from time to time, however there are no records that indicate the extent of these activities.

During the public consultation period, commercial fishers expressed concerns regarding the impact the proposed development may have on their activities. The proposal occupies a small portion of Smith Bay and will not preclude the use of the rest of the bay for commercial fishing activities. In addition, the redesign to an open fully piled jetty would lessen any potential impacts on the two known commercial operations. The commercial operations are also able to fish elsewhere in nearby and surrounding waters.

The AR concludes that the area associated with, and operation of, the proposal is unlikely to impact on the existing local small scale commercial fishing operations.

5.5.3 Tourism

Tourism is discussed throughout the EIS. Chapters 20 and 21 and Appendix O are the key sections that refer to tourism.

Tourism is a major industry on Kangaroo Island. Smith Bay is not within a major tourism area or Marine Park. Most tourism on the Island is concentrated in the south-western, southern and south-eastern parts of the Island that are predominantly associated with wilderness and national park areas. As a result, the proposal is unlikely to have any potential direct impacts on the tourism industry (with the exception of Molly's Run Bed and Breakfast as detailed at Section 5.5.2).

The proposal will have direct impacts though haulage truck interacting with tourist vehicles, in particular along the Playford Highway to Stokes Bay Road, which is the only entry point to Stokes Bay, a popular tourist spot on the north coast of the island. Traffic impacts, including on other road users, are discussed in more detail at Section 5.6.2.

The proposal may also have short-term impacts on the availability of tourist housing in particular during the operational phase as a result of the anticipated increase in population. There is an expectation that some of the required housing, in the short term, may be filled through the use of

[199] EIS Chapter 20, p449

accommodation that would otherwise be used for tourism. The demand for housing in general is discussed in more detail at Section 5.7.

Whilst this may have a neutral impact from an economic point of view for the individual accommodation providers (as the available tourist accommodation will be leased out regardless of who they are leased to), this may restrict the ability of tourists to find suitable accommodation resulting in decreased visitation rates and any financial benefits of their stay. This is not expected to be a significant impact as other housing options will also be available (i.e. rental accommodation, houses for sale etc.) and any such impact is expected to only be short-term until suitable longer term accommodation can be arranged for the anticipated increase in the island's residential population.

The issue of the non-tangible impact to the 'clean and green' image remains. The actual impact of this is hard to estimate or manage, as it is based upon market perceptions. Although plantation forestry may be a sustainable and 'green' industry, it is not this that attracts tourists to the island, with native bushland, wildlife, adventure and exploring being the key tourism attractions.

The AR concludes that the proposal may have minimal, short-term impacts on tourism operators on Kangaroo Island as a potential result of tourism accommodation being used by staff until longer term arrangements can be made. This impact is expected to be short-term and reasonably insignificant.

The AR concludes that whilst the economic impacts of the proposal itself have been quantified the broader impacts on the Island's economy, in particular in relation to the tourism industry, have not been fully explored.

Note: Impacts associated with haulage trucks interacting with other road users, including tourist vehicles, is discussed below (section 5.6.2).

5.6 *Traffic and Transport*

Traffic and Transport - Guideline 10: The proposed port, and associated infrastructure, will generate traffic, in particular for the export of timber. The proponent estimates that there will be approximately 14 shipments of harvested timber per year from KIPT operated land, and that the wharf will be used 50-75 days per annum in total for all Kangaroo Island timber exports (including from other timber operators on the Island). As it is proposed to be a multi-user wharf, traffic will also be generated from a range of potential other uses including, but not limited to, agricultural exports and tourist and/or cruise ships.

Chapter 21 of the EIS and Appendix P relate to traffic and transport.
Chapter 2 of the 2nd Addendum relate to traffic and transport.

The majority of Kangaroo Island's road network is managed by the Kangaroo Island Council, with the Playford Highway (Parndana to Kingscote), American River Road, and Hog Bay Road managed by the State Government.

Transport impacts will occur during construction and operation.

Construction
The construction period is anticipated to be approximately 12 to 15 months.

During this phase, the majority of the bulky construction materials for the development of the proposal will be delivered by barge directly to the site or via the existing road network using single-articulated trucks. In addition, mobilisation (and demobilisation) of maritime construction equipment will occur during, and in the lead up to, this period.

Equipment to be transported during the construction period includes[200]:

- pre-fabricated structures such as the restraint dolphins
- link span bridge
- jetty structure and materials
- refitted barge/pontoon and other dedicated wharf infrastructure
- office buildings
- weighbridge
- ablutions buildings
- lighting
- security fencing.

The land-based construction workforce is anticipated to result in up to 15 personnel on site at any one time who would access the site via personal light vehicles. Ancillary deliveries (e.g. building materials and despatches) would occur via a mix of light vehicles and trucks. It is expected that 10 to 15 vehicle movements per day (to and from the site) would occur during the construction period.

The land-based traffic impacts during construction are likely to be of a similar scale and nature to other larger capital ventures on the island and are unlikely to be distinguishable from existing traffic volumes on the road network.

There is expected to be a small number of marine vessel movements during the construction phase, with the EIS estimating that fewer than a dozen vessel movements are expected to occur during the construction period. The EIS also identified that the construction activities would occur towards the western end of Smith Bay and would not impact on access to the rest of the bay[201].

The EIS identified that a Marine Activity Zone (MAZ) would be prescribed for the construction period[202]. A MAZ is a well-accepted approach to managing the impacts of marine traffic during construction.

The Department of Planning, Transport and Infrastructure has an *Environmental Code of Practice for the Construction of Road, Rail and Marine Facilities* that covers both land-based and marine-based activities. The Code includes the requirement for a Contractor's Activity Zone (CAZ) to be defined. A CAZ defines the area where activities associated with the construction of the project are permitted to take place. This includes the construction site and any other area necessary for the construction of the works, including areas outside of the subject site itself. Work is not permitted outside the CAZ.

It is recognised that marine traffic will increase during the construction period and may have a small impact on the recreational fishers who use Smith Bay. However, these impacts will be temporary and can be successfully managed through the establishment of a MAZ. The MAZ should be identified in the broader CAZ to inform the public of a clearly defined area that is to be avoided, thus reducing the marine navigational risks during the construction period.

[200] EIS Chapter 21, p459 and 482

[201] EIS Chapter 21, p486

[202] EIS Chapter 21, p486

The AR concludes that whilst there will be some land- and marine- based traffic impacts during the construction period, these will be short-term and unlikely to significantly impact upon the existing road or marine network and road or marine users. If the proposal is approved, the establishment of a Contractor Activity Zone and a Marine Activity Zone should be a condition that applies during the construction phase to manage potential impacts of traffic during this period.

Operational traffic impacts of the proposal are discussed in more detail below.

5.6.1 Marine Traffic

Marine traffic impacts related to biosecurity are discussed in section 5.4.3.1.

The EIS identified the timber product would be exported using Panamax vessels (up to 285m long / 60,000 to 80,000 dead weight tonne) and Handymax vessels (up to 200m long / 35,000 to 59,000 dead weight tonne), subject to operational requirements. The total number of vessels berthing per year would be dependent upon the harvest cycle, commodity prices, permitted and available vehicle configurations and the size of vessels used. The EIS anticipated that between 10 and 20 vessels per year will be loaded with timber product at the port once operational: up to 20 Handymax vessel will use the facility during the first 3 to 4 years of operations, after which up to 10 Panamax vessels will use the facility as the operation switches to woodchips. The total number of berthing days is estimated at 30 to 75 days per year[203].

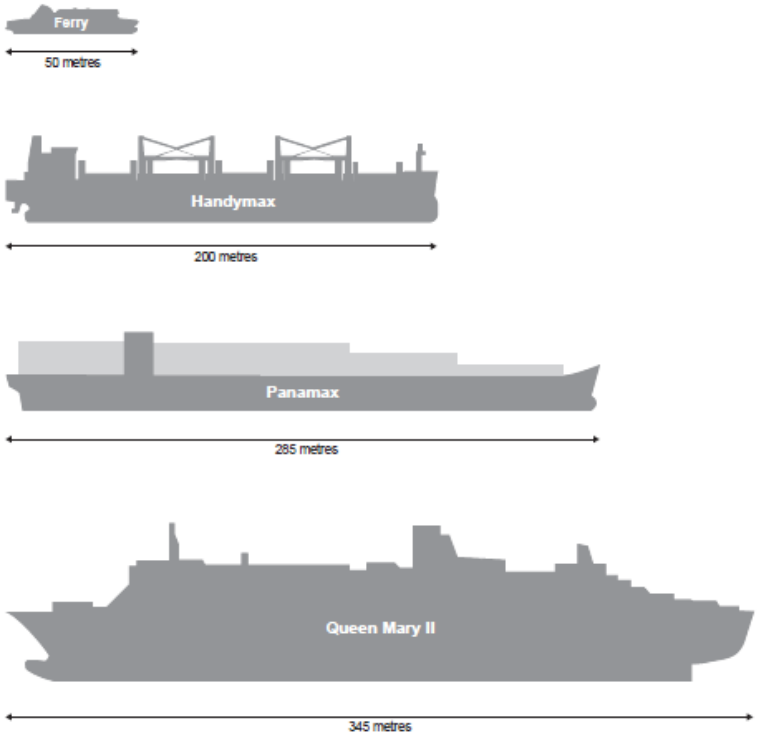


Figure 47: Comparative indication of vessel sizes (EIS Figure 21-9)

The EIS identified that the vessels would enter Smith Bay and align themselves parallel to the wharf approximately 100m from the berthing pontoon with tugs and/or bow and stern thrusters (if available)

[203] EIS Chapter 21, page 483

bringing the vessel onto the wharf. A tug would also be used to enable the ship to depart the wharf, once loaded.

The use of tugs would create additional vessel movements at the facility. It is anticipated that arriving vessels will require up to two tugs for berthing and a single tug for departure, with the tugs arriving from the mainland. Following berthing of a vessel, the tugs may return to their home port, or may remain at the site until de-berthing of the vessel is required. Tugs will not be permanently berthed at the wharf.

Anchoring of timber product vessels or tugs in Smith Bay is not proposed.

The movement of these vessels into and out of Smith Bay will be subject to a wide variety of legislation, standards and guidelines, including but not limited to, the *Marine Safety (Domestic Commercial Vessel) National Law Act 2012*, National Standard for Commercial Vessels, *Harbors and Navigation Act 1993* and the Commonwealth *Navigation Act 2012*.

The EIS identified that vessels docking at the Smith Bay facility are expected to approach from the established shipping route, located approximately 20km due north of Smith Bay in Investigator Strait[204]. This is the main shipping route between South Australia and Western Australia and is a well-established and highly frequented route as can be seen in Figure 52.

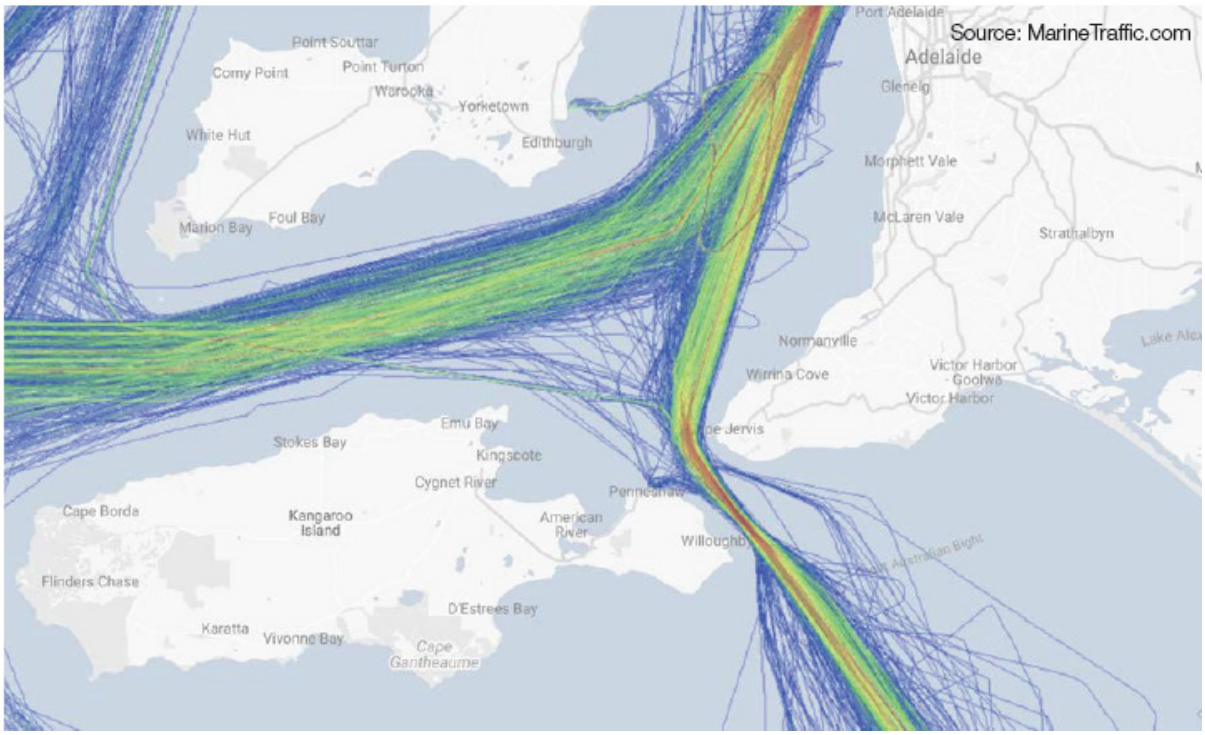


Figure 48: Large (gross tonne 25,000-60,000) and very large (gross tonne> 60,000) vessels passing through investigator strait in 2017 (EIS Figure 21-10 / Marinetraffic.com)

It is estimated that approximately 2000 vessel movements occur from South Australian commercial ports each year[205], as such the expected vessel traffic to and from Smith Bay (10 to 20 movements per year) during the operational phase is unlikely to have an impact on the overall vessel movements to and from the state. At the local level, these movements may have a slight impact on the existing

[204] EIS Chapter 21, p484

[205] EIS Chapter 21, p486

commercial and recreational vessels that utilise Smith Bay, however, due to the size, low volume and nature of these existing vessels, the impact of 10 to 20 Handymax and/or Panamax ships berthing in Smith Bay per year is considered to be low. Any impacts can be successfully managed through a Marine Traffic Management Plan.

To ensure public safety, the EIS identified that a Temporary Exclusion Zone (requiring third party vessels to remain at least 50m from the wharf face and at least 25m forward and aft of the berthed vessel) would be established around the offshore infrastructure when vessels are berthed at the facility[206].

Although the amended design is further offshore, which will result in a varied location for the navigation aids, restraint dolphins, mooring dolphins and tug mooring facility, this will not result in an impact on marine-based transport or a change to the extent of the Temporary Exclusion Zone[207].

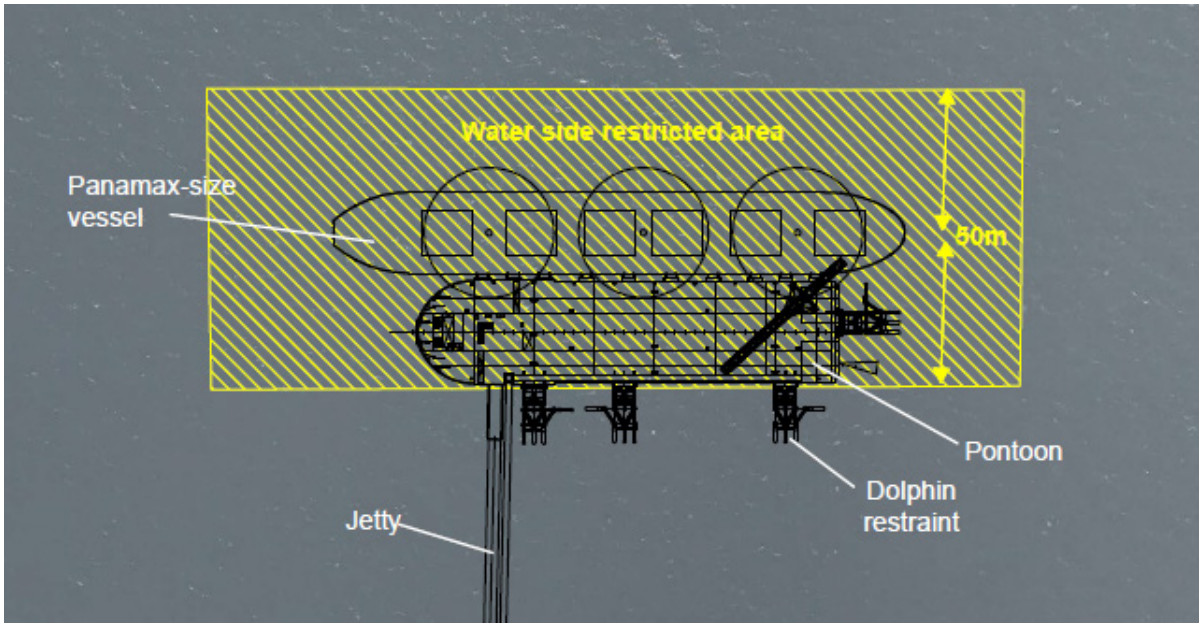


Figure 49: Proposed temporary exclusion zone at Smith Bay (EIS Figure 21-12)

Temporary Exclusion Zones are utilised at others ports around Australia and are a well-accepted industry standard to manage potential safety issues associated with marine traffic movements. The Temporary Exclusion Zone would be identified through the use of signage at the site and along the wharf infrastructure. Temporary Exclusion Zones are expected to be short term (3-5 days) and infrequent (10 – 20 times per year). Recognising the limited use of Smith Bay by recreational and commercial fishers and notification of the exclusion zone to enable any existing users of Smith Bay to find alternative fishing location during the exclusion period, this temporary impact is considered negligible.

DPTI advised that Temporary Exclusions Zones are not a requirement under the *Harbors and Navigation Act 1993*, however once appointed, the Port Operator will be responsible for all vessel movements within the port boundary (as defined and gazetted) and may choose to include use of Temporary Exclusion Zones.

[206] EIS Chapter 21, p487

[207] First Addendum section 3.3.4, p 12

If approved, prior to the use of the facility, the proponent must apply to have the harbor defined (and gazetted) as a 'Port' and must enter into a Port Operating Agreement with the Minister for Infrastructure and Transport. This is a separate process pursuant to the *Harbors and Navigation Act 1993* and involves separate consultation and approval pursuant to that Act.

The AR concludes that due to the infrequency of marine vessel traffic to and from Smith Bay, the movement of 10 to 20 large vessels per year is unlikely to have a significant impact on the existing marine vessel traffic of the area. Any impacts can be appropriately managed through the implementation of Temporary Exclusion Zones when ships are berthed and the development and implementation of a Marine Traffic Management Plan prepared in consultation with the Department for Infrastructure and Transport.

5.6.2 Land-based Traffic

Along with the location of the Smith Bay port site itself, the proposed transportation of timber product to the Port site has been the subject of significant debate, and has seen the proponent amend its approach through the assessment process. This in the context also of the fact that the majority of Kangaroo Island's road network is managed by the Kangaroo Island Council (who have expressed objection to the proposal), with the Playford Highway (Parndana to Kingscote), American River Road, and Hog Bay Road managed by the State (Department for Infrastructure and Transport (DIT) on behalf of the Commissioner for Highways).

Noting this the commentary below focusses initially on a distillation of the proponent's position as explored in their initial EIS and subsequently in the 2nd Addendum, followed by an analysis of the issues.

The EIS outlined that the proponent's preferred strategy to transport its timber products from the plantations to the port facility is to establish a defined haulage route. The EIS also identified the need to upgrade the proposed defined haulage route to permit the use of high productivity vehicles (B-doubles and/or A-doubles).

The EIS outlined two potential defined routes. Option 1 consists of Playford Highway (beginning at the junction of West End Highway) to the junction of Stokes Bay Road, Stokes Bay Road from Playford Highway to the junction of Bark Hut Road, Bark Hut Road from that junction to the junction of McBrides Road, McBrides Road, and North Coast Road from McBrides Road to Freeoak Road which constitutes the entry to the development site. Option 2 consists of Playford Highway, Ropers Road, Gum Creek Road, Gap Road and North Coast Road. The proponent identified in the EIS that its preferred route is Option 1[208].

[208] EIS Chapter 21, p480

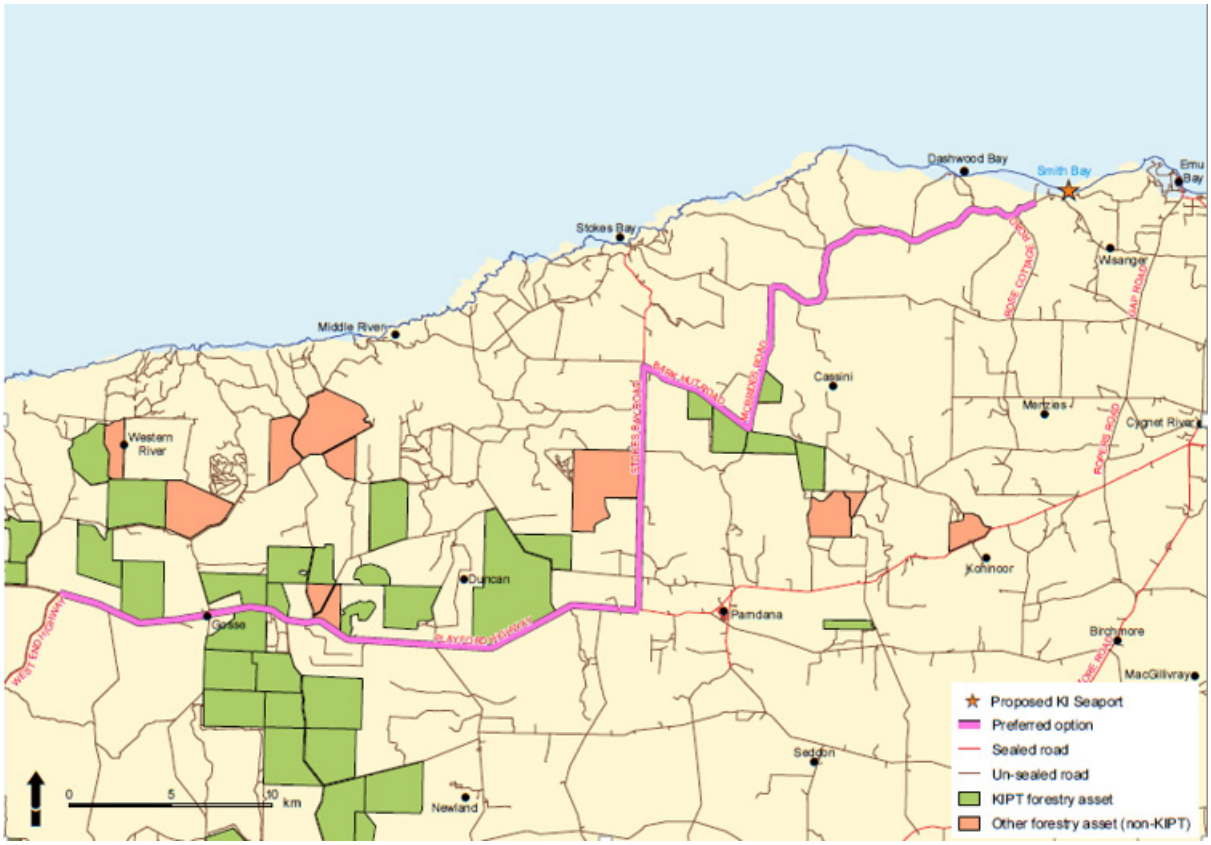


Figure 50: KIPT's preferred route (EIS Figure 21-8)

The EIS outlined that, should the preferred route not be agreed to, the proponent will utilise General Access Vehicles (GAV's), which are currently permitted to operate on all existing roads on the existing Kangaroo Island network. These vehicles would be '*single articulated trucks (19-metres long with a 30-tonne payload capacity).*[209].

Utilising GAV's, the transport route taken would vary in response to road, meteorological and traffic conditions. The roads identified in the EIS that the proponent will most likely use under this scenario include[210]: Playford Highway, Stokes Bay Road, Bark Hut Road, Ropers Road, Gap Road, Miller Road, Gum Creek Road, Springs Road, Rose Cottage Road, Boxer Road, Ten Tree Lagoon Road, Birchmore Road and North Coast Road. Feeder roads serving the plantations would also be used.

The EIS identified an intent to transport timber 24 hours a day, seven days a week (24/7) year round. Depending on the selected vehicle size, the following vehicle movements would result:

- A-doubles – 1 truck every 22 minutes passing along the transport route, or
- B-doubles – 1 truck every 16 minutes, or
- Semi-trailers – 1 truck every 11 minutes[211].

After further consideration and discussion with DIT staff the 2nd Addendum identified that 'given the condition of Stokes Bay Road and McBrides Road, there is no option which would allow timber to be delivered to the site from the west along North Coast Road. The only viable option therefore is to approach the site along North Coast Road from the east.[212] It also identified that the most significant

[209] EIS Chapter 21, p455

[210] EIS Chapter 21, p460

[211] EIS Table 14-6, Chapter 21

[212] Second Addendum, section 2.3.3

impact on the physical road network would occur along the 10km unsealed section of North Coast Road from Emu Bay Road to Freeoak Road).

The 2nd Addendum identified routes that would be used to transport timber from each of the plantations to the site in each of the five years of the fire salvage harvest.

The options utilise West End Highway, South Coast Road, Birchmore Road, Playford Highway and North Coast Road. These roads are Council-controlled with the exception of part of the Playford Highway, east of Parndana, which is under the care and control of the Commissioner of Highways. These roads are all sealed with exception of the portion of North Coast Road from Emu Bay Road to Freeoak Road.

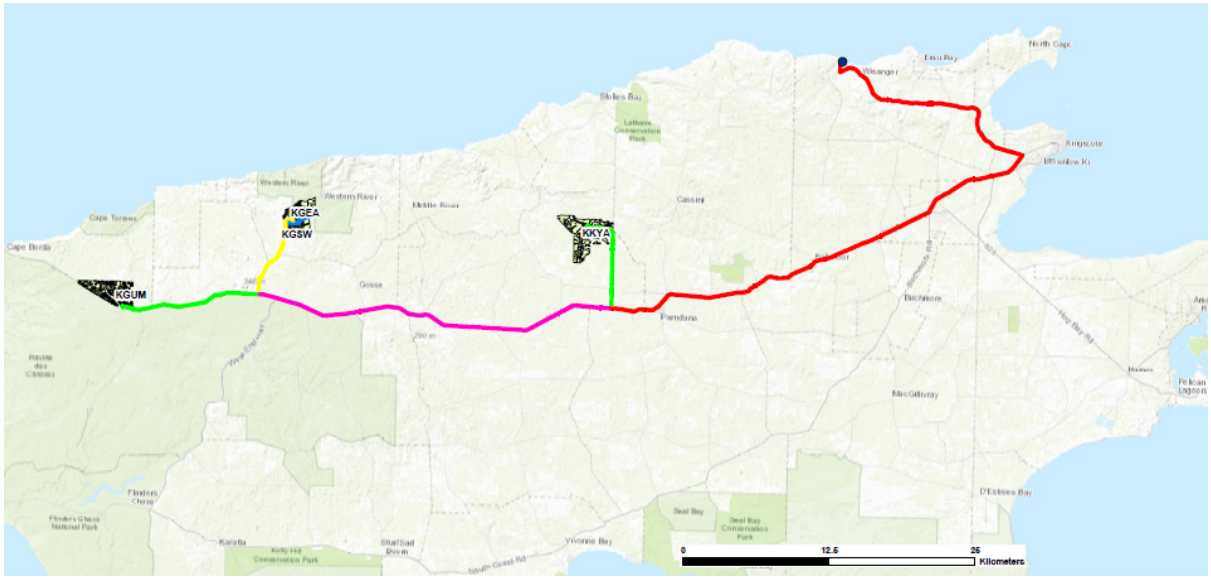


Figure 51a: route – 1st year fire salvage operation (Second Addendum Figure 2-1)

Figure 51b: route – 2nd year fire salvage operation (Second Addendum Figure 2-2)

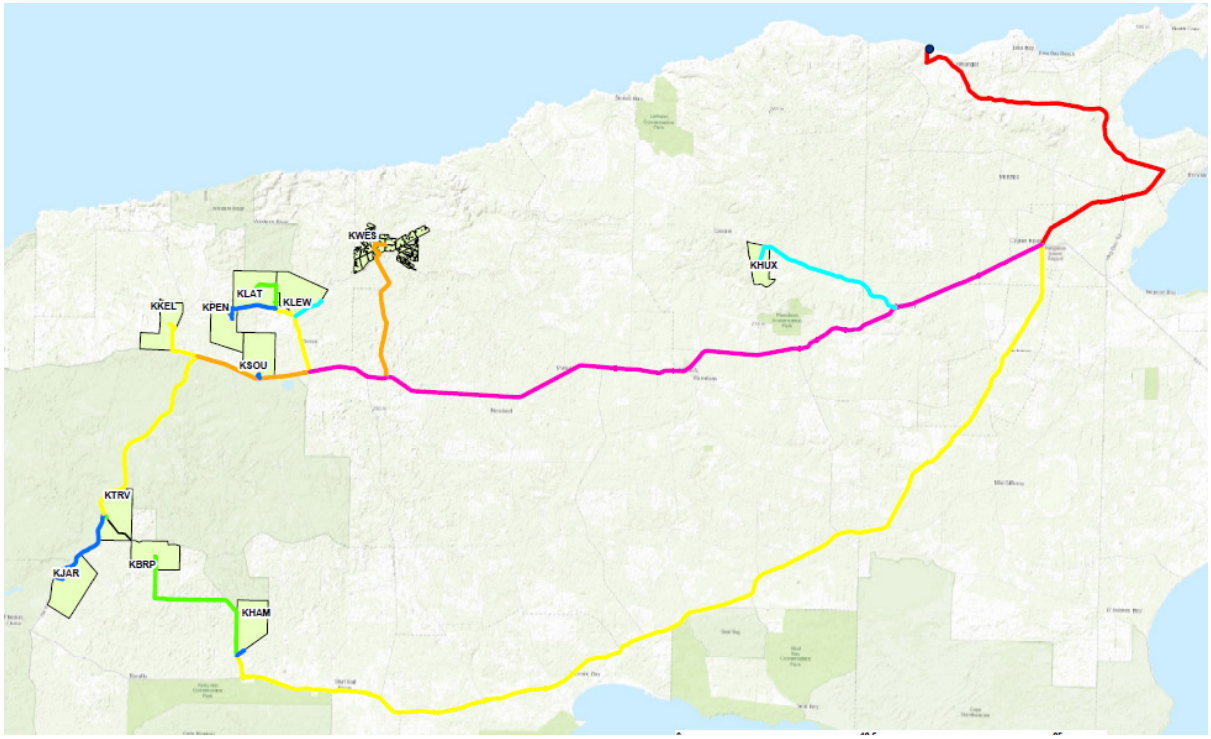


Figure 51c: route – 3rd year fire salvage operation (Second Addendum Figure 2-3)

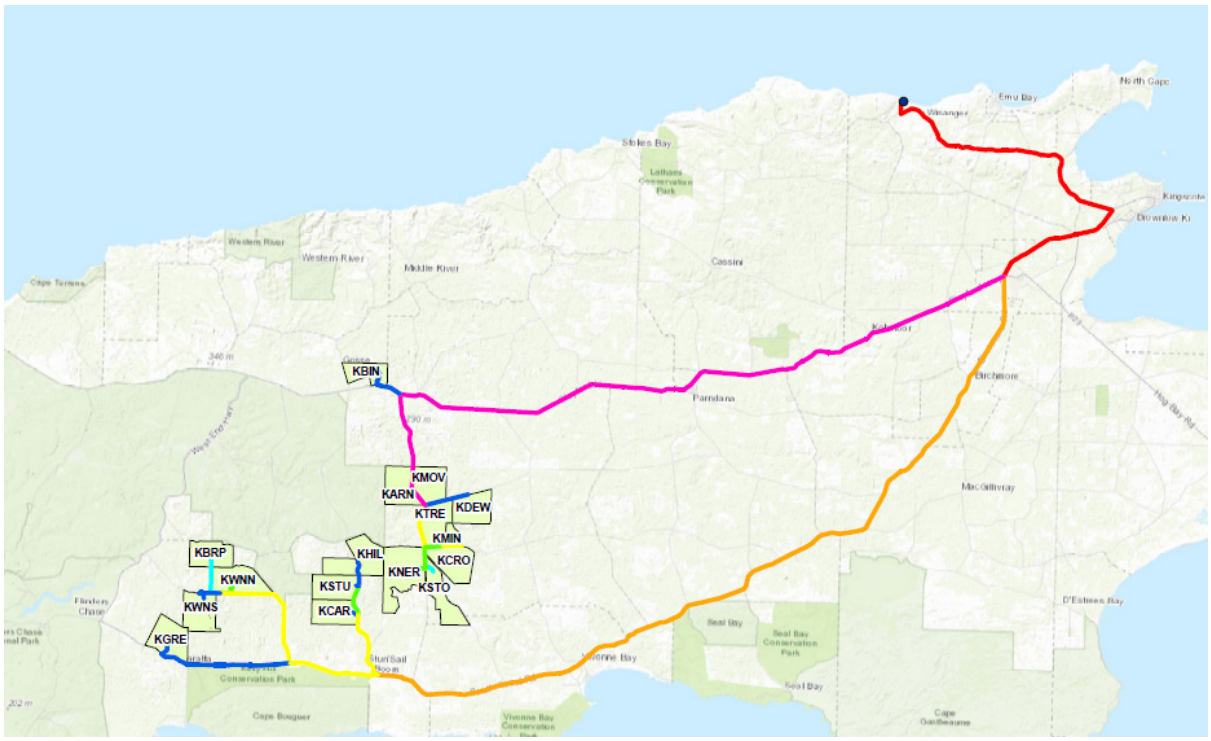


Figure 51d: route – 4th year fire salvage operation (Second Addendum Figure 2-4)

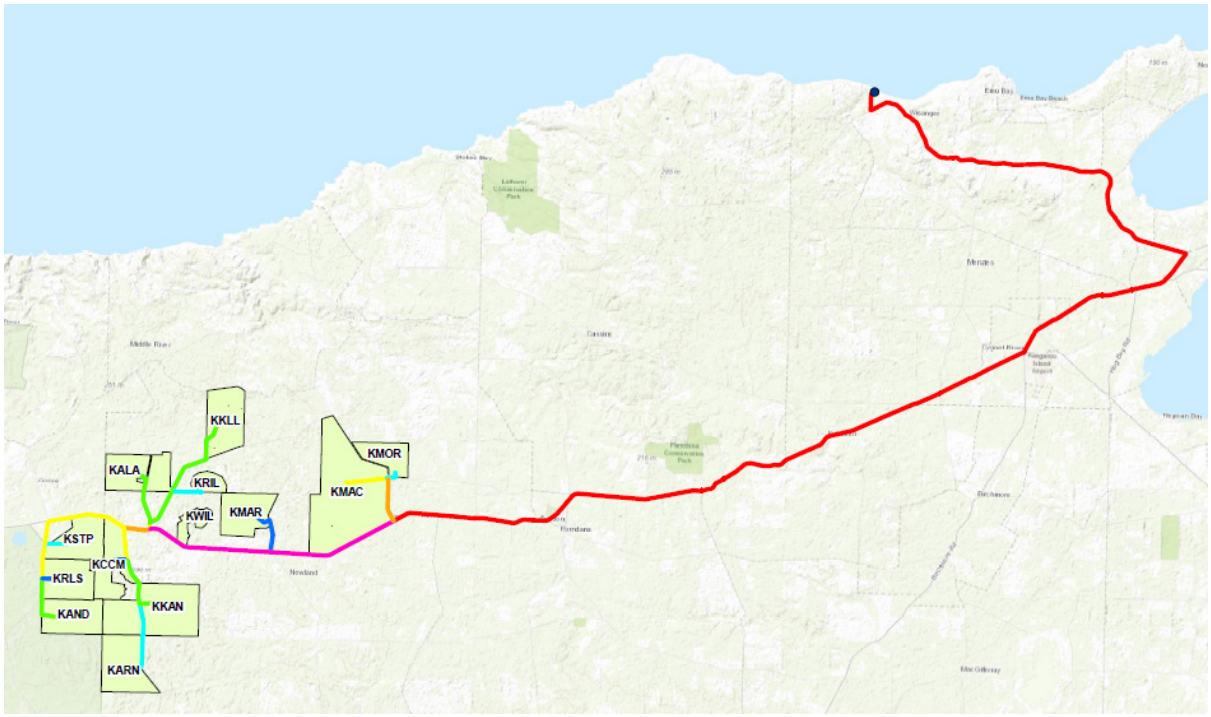


Figure 51e: route – 5th year fire operation (Second Addendum Figure 2-5)

The 2nd Addendum identified that the timber would be transported by either 19m semi-trailers with a payload of 28 tonnes (as identified in the EIS) or via High Productivity Vehicles (HPV's) being either a 7 or 8 axle 3m truck and dog trailer with a payload of 38 tonnes or 45 tonnes. The proponent indicated a preference to utilise 7-axle or 8-axle vehicles to reduce the number of trips required to transport the timber[213].

[213] Second Addendum, section 2.3.5

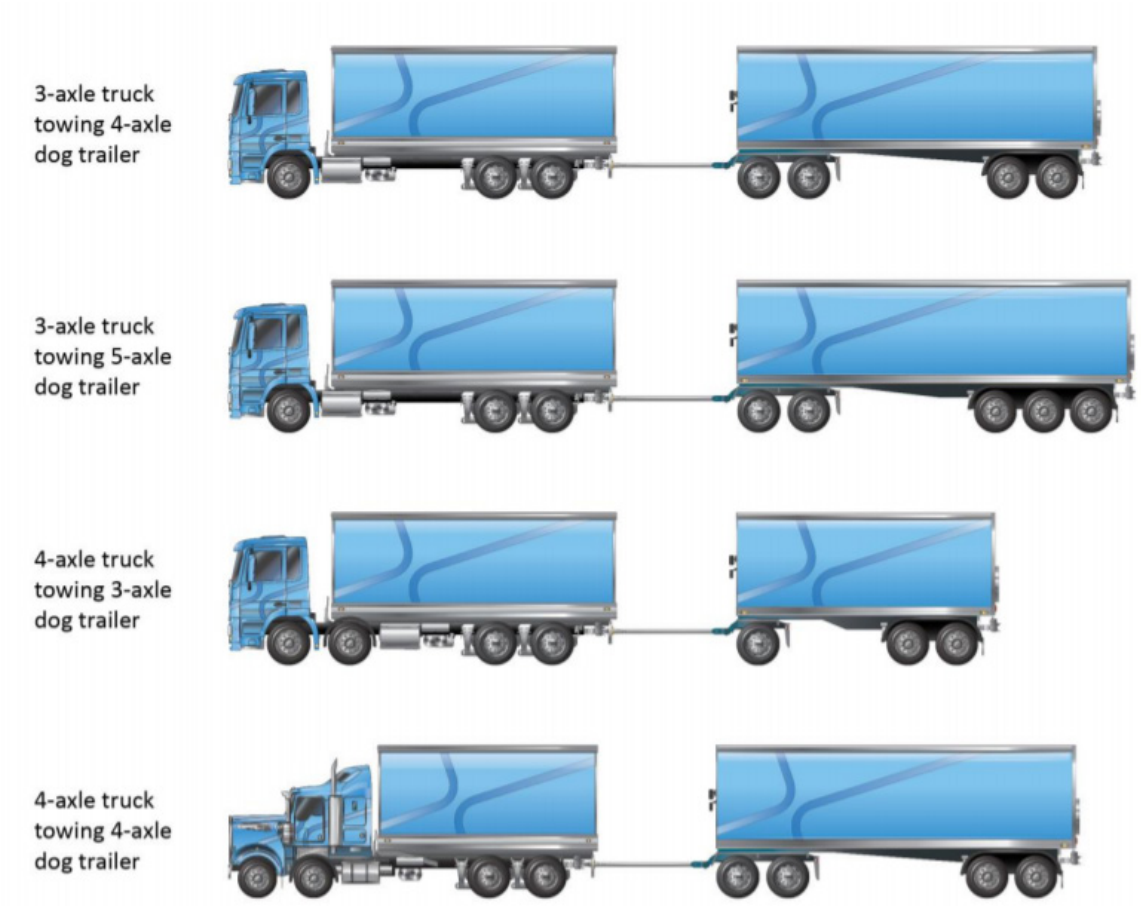


Figure 52: Proposed truck and dog combinations (National Heavy Vehicle Regulator - National PBS Truck and dog trailer notice Information Sheet – May 2016)

The 2nd Addendum did not identify details regarding transportation of timber beyond the fire salvage operation which will last 5 years. It is assumed that the identified routes will continue to be used as required to haul timber product to the port. If approval is provided, should the proponent propose to use HPV's (as originally identified in the EIS) or different roads post-fire salvage harvest, or at any other time, this will require further assessment and discussion with the relevant road authorities.

The EIS had identified that, as a result of the proposal, 'the increase in overall traffic is expected to be approximately 15 per cent on the major roads, increasing further to 28 per cent on the Playford Highway and 81 per cent on North Coast Road.'[214] With the change in route, the 2nd Addendum maintained that the increase in overall traffic would not change, stating 'the impact on the road network will be greatest along the section of the route that is already the most heavily trafficked, which is Playford Highway from the intersection of Birchmore Road to the intersection of North Coast Road'. This section of Playford Highway is under the care and control of the Commissioner of Highways. The 2nd Addendum identified that elsewhere along the proposed new haulage routes, traffic volumes will be proportionately higher than the current traffic volumes which are low (being less than 100 vehicles per day).

The 2nd Addendum proposed a reduction in haulage hours to Monday to Friday from 6.00am to 6.00pm, with the option of 6.00am to 12 noon haulage on Saturdays as required and identified intent

[214] EIS Chapter 21, p472

to harvest up to 712,000 tonne of timber per year during the first 5 years of salvage harvest (this is consistent with the 730,000 tonne per year identified in the EIS).

Based on the reduced haulage hours, change in vehicle type and the number of trips per day identified in Table 2-2 of the 2nd Addendum, the following vehicle movements would result:

- Semi-trailers – approx. 18 truck movements per hour, equalling approx. 1 truck every 3.5 minutes along the route, or
- 7-axle trucks – approx. 12 trucks movement per hour, equalling approx. 1 truck every 5 minutes, or
- 8-axle – approx. 10 truck movements per hour, equalling approx. 1 truck every 6 minutes

The 2nd Addendum also indicated that trucks would travel 'at the appropriate speed for the conditions and that all trucks would travel at a speed that is appropriate for that particular section of road that will facilitate trucks stay on the correct side of the road (to reduce the effects of road damage to the inside shoulder of the pavement near the edge), and that speed limits for trucks, both loaded and empty, will be limited to 50km/hour unless permitted otherwise'[215]. DEW raised concern at the ambiguity of this statement, sought clarity regarding speed limits and advised its preference for reduced speed limits for all trucks where possible. The proponent responded that reduced speed limits would be favoured in certain conditions provided the slower speed did not create a hazard for other road users. Details pertaining to this could be further explored in detail during the preparation of Road and Traffic Management Plans, which will be required should approval be granted.

In assessing the issue of land based traffic the following analysis is provided.

Regardless of type of vehicle used or the route taken, the increase in use will have significant impacts on the island's road network and other road users (including tourists), and resultant road upgrades will be required. Playford Highway and North Coast Road in particular are used by locals and tourists on a daily basis. Playford Highway is also a key school bus routes.

It is expected that noise levels will increase at sensitive receivers (residences) along the transport route as a result of the increased heavy vehicle haulage traffic. Whilst an updated noise assessment was not provided with the 2nd Addendum, the EIS included a noise assessment (Appendix N) which showed that the predicted noise levels would comply with the *DPTI Road Traffic Noise Guidelines* [216]. Although different roads are now proposed to be used, this information is still relevant as it is indicative of the noise that could be expected. It is noted that transport is no longer proposed during night-time hours, however due to the reduced hours of haulage, resulting in a significant increase in vehicle frequency, the daytime amenity of the residences along the transport route, although limited, is likely to be impacted. This issue was raised in several submissions on the 2nd Addendum.

The proponent responded that they were in discussion with DIT in regards to mitigating the impacts of driving on the unsealed section of North Coast Road (including the option to seal this section) and acknowledged the potential impact on school buses.

The proponent also obtained the maps of school bus routes on Kangaroo Island with a view to consulting with the Council and the Kangaroo Island Community Education regarding routes and intersections that will be used by both school buses and haulage trucks. The proponent intends to use 'kilometre markers' on the approach to intersections, which will then be used by the truck drivers to

[215] Second Addendum, Appendix A3, example Driver Code of Behaviour

[216] EIS Chapter 21, p476

signal their approach to those intersections by a common UHF channel to be used by both the school buses and the trucks. DIT has advised that this method of risk management is generally only utilised for private traffic management purposes (e.g. construction and mining operations) and is not supported for use on public roads.

With regard to the interface of school buses with vehicles, including heavy vehicles, the DIT guidelines '*School Bus Stops on Rural Roads*' outlines road safety principles and considerations that inform safe locations of school buses on rural arterial roads. These guidelines, currently under review, also reflect the Department for Education's policy for school bus stops. The opportunity exists, once the routes are confirmed and should approval be provided, if required, for an assessment of current school bus pick-up and drop-off locations with the proponent, the Department for Education, DIT and/or Council (for Council roads). It is considered that Council could adopt and apply these principles to school bus stops on Council roads.

Many submissions received raised concerns about the ability of the roads to accommodate the significant increase in volume of traffic, the use of heavier vehicles, safety of other users on the road network, and in particular, who would fund and maintain the required upgrades.

It is noted that the use of HPV's longer than 23m are no longer proposed by the proponent, at least for the fire salvage operation (five years). Vehicle use beyond this period has not been identified and any proposed change in use of vehicles (i.e. to larger vehicles) will require further assessment and discussion with the relevant road authorities.

The Kangaroo Island Council, in its submission on the EIS and subsequently, raised serious concerns in relation to the cost of constructing and maintaining Council road networks to appropriate standards for the proposed vehicles' weight and frequency (regardless of use of semi-trailers, B-double or A-double). In its submission on the 2nd Addendum, Council noted the intended use of lighter vehicles, however reiterated its concern regarding impacts on the road network. Council maintained that the identified roads would still require substantial investment to ensure the safety and amenity of tourists / residents and the protection of native fauna, and that as most of the identified roads are still managed by the Council, they are unable to fund any required upgrades and/or maintenance.

Additionally, the Council raised concern around the safety of other road users and required that the road transport route for heavy haulage trucks avoids, as far as practicable, existing tourism routes, and major domestic traffic routes to avoid serious conflict and potential incidents.

Overall the Council does not consider the Smith Bay proposal feasible in the context of road transport routes. The Council is concerned about the lack of investigation into other possible locations, specifically those west of Stokes Bay Road, which would allow the proponent to put their own roads in place through their plantations, where practical. The EIS is silent on the potential for this as a possibility.

In its response the proponent maintained that locations to the west of Stokes Bay are unsuitable for a facility of this nature due to environmental constraints in the marine environment.

It is also noted that that daytime hours on the island can vary significantly based upon the season, and a restriction of 6.00am to 6.00pm may be acceptable for part of the year, however, in overall terms the volume of traffic from haulage operations would result in a significant safety impact on other road users, amenity and lifestyle impacts on adjacent land users, and increased risk of fauna strike along the identified routes. The changed route along sealed roads, and the sealing of a section of North Coast Road will assist to mitigate some of these impacts but will not reduce the risk of incidence or

fauna strike (land-based traffic related impacts in relation to fauna are discussed in detail at section 5.4.4.4).

Following the proposed route amendments identified in the 2nd Addendum and based upon concerns regarding the proposed use of South Coast Road, which has a high tourist usage, the Department for Infrastructure and Transport undertook an assessment of potential transport routes and consequently identified its preferred route which utilises Playford Highway and a portion of North Coast Road as the key route to the subject site, and consolidates heavy vehicle movements away from South Coast Road (refer Figure 53 below). DIT has advised that it is expected that all haulage vehicles, irrespective of whether they are GAV's or HPV's will utilise a defined route in order to minimise traffic impacts. The proponent accepted the Departments conclusion that South Coast Road is not suitable for transporting timber to Smith Bay and that the primary route for transporting timber to Smith Bay should be Playford Highway and North Coast Road[217].

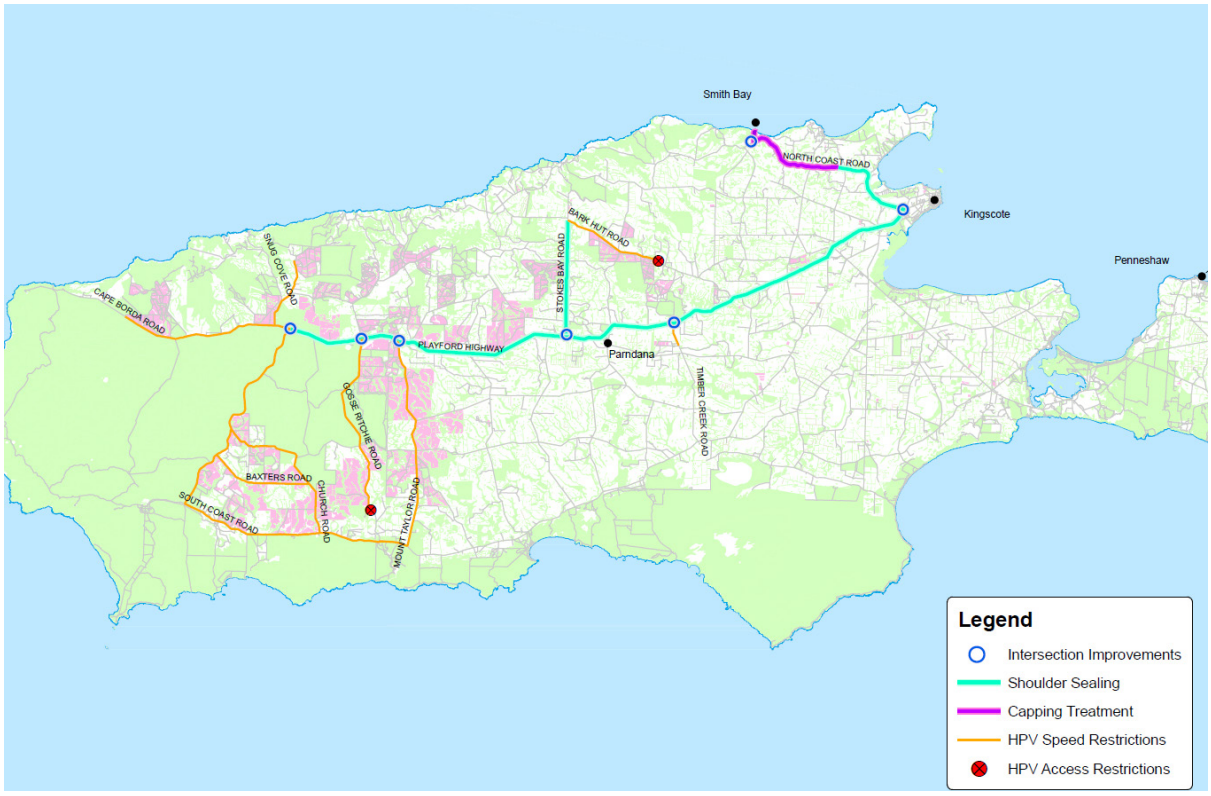


Figure 53: Department for Infrastructure and Transport's preferred route to the subject site (Department for Infrastructure and Transport submission on the Second Addendum)

The selection of the route was based upon a number of aspects including road geometry, road width, impact on structures, road safety, minimising impacts on tourist and other traffic, and minimising impact on local communities and the environment.

In further feedback from DIT on the matter the following has been confirmed:

- The route selected provides the capacity for the safest and most efficient pathway to the Port site.

[217] Second Response Document, page 6

- Regardless of the vehicle type upgrades to the above preferred route will be required. A route assessment undertaken has identified these upgrades, including those required to enable high productivity vehicle (HPV) access.
- The introduction of HPV's would be subject in the first instance to progressing access in accordance with the *Heavy Vehicle National Law (South Australia) Act 2013* (HVNL). The route identified by the Department includes roads also under the care and control of Council and would require the Council to also give consent to access under the HVNL.
- The scope and delivery of the required upgrades will be resolved through a Road and Traffic Management Plan, to be entered into between the proponent and the relevant road authority.
- Commonwealth funding in the order of $32M will become available after 1 July to support planned investments in in the key arterial roads on the Island as part of a road safety and bushfire resilience package.
- This road safety and bushfire resilience package initiative will upgrade Hog Bay Road and the Playford Highway to improve access from the westernmost points of the Island to the mainland (via Kingscote Airport and the Penneshaw Ferry Terminal). The proposed upgrades will also improve road safety and freight productivity, with work to include road widening, shoulder sealing, minor intersection improvements and installation of audio tactile line markings. The project also includes works to improve north-south connections to the main arterial route.
- The proponent will be responsible, in the absence of other dedicated funding, to fund the upgrade to the road network determined through the Road and Traffic Management Plan, via a Road Infrastructure Agreement, including payment for local access roads upgrades, maintenance and restoration on which the operations will rely.
- Mechanisms within the *Heavy Vehicle National Law* are available for the relevant road authority to facilitate the use of the existing road network by heavy vehicles, including requiring the roads to be upgraded by the proponent at their cost.
- Notwithstanding the Council's stated opposition to the proposal, there are also powers in the Highways Act that can be exercised if necessary (subject to Minister for Transport's approval) to carry out roadwork on the roads concerned, should Council be unwilling to support their use and the upgrades required.

DIT has accordingly advised that, should the proposal be approved, in order to ensure that all transport impacts on both State and Council roads are appropriately addressed, a Road and Traffic Management Plan for the final route will be required. The Plan must clearly detail the route, vehicle size(s), safety impacts and any operational interventions and infrastructure upgrades that may be required to support the proposed vehicle movements. The assessment of the route and its impacts should take a risk based approach (e.g. as applied by the National Heavy Vehicle Regulator) to ensure that any interventions are commensurate with the increase in risk. This approach should be used irrespective of whether GAV's or HPV's are to be utilised for haulage purposes. This plan will need to be in place prior to the commencement of construction of the port.

DIT has also advised that should the proposal be approved, the applicant be accountable for any damage to transport assets caused by the development, with any damage being repaired to the satisfaction of the relevant road authority at the proponent's cost.

Given the above, the outcomes of the Road and Traffic Management Plan must be subject to a Road Infrastructure Agreement, which will detail all road infrastructure works required to support the development and the funding arrangements for these works. This Agreement must be entered into by the proponent and the road authority prior to the commencement of construction.

The AR concludes that, regardless of the route taken, the significant increase in the volumes of haulage vehicles on the road network will result in a significant impact on the island's current road infrastructure, other road users, terrestrial fauna, and residences adjacent the route. This includes, as also identified elsewhere in the report, amenity impacts of dust and noise, safety concerns for other road users and the risk of vehicle strike on fauna traversing the network (particularly the endangered Kangaroo Island echidna and threatened Rosenberg's goanna).

An assessment has been undertaken of the proponent's 'preferred route' and the subsequently amended proposed route as identified in the Second Addendum. Based on further investigations undertaken by the Department for Infrastructure and Transport, a preferred route has been identified which differs from that contained in either the EIS or Second Addendum. This route would remove haulage traffic from the main tourist road of South Coast Road and will likely provide a better alternative for the transportation of the timber. Significant upgrades to the road network would be required to enable use of this route. Finalisation of this route and identification of the required upgrades, is still subject to negotiations with both the Department for Infrastructure and Transport and the Kangaroo Island Council. Additionally, permission pursuant to the *Heavy Vehicle National Law (South Australia) Act 2013* would be required for any use of High Productivity Vehicles.

Based upon advice from the Department for Infrastructure and Transport, use of the route identified by the Department is supported.

It is acknowledged that road upgrades will be required to accommodate the volume of vehicles and the use of heavy vehicles. As the proponent is the main beneficiary of the development and the road upgrades/maintenance would not otherwise be required, the AR concludes that the cost of such works should be borne, unless other dedicated funding is provided, by the proponent or as otherwise negotiated with the relevant road authorities. If approved, the required upgrades and maintenance can be managed through the implementation of a Road and Traffic Management Plan and Road Infrastructure Agreement executed with the relevant road authorities (Kangaroo Island Council and the Department for Infrastructure and Transport, route dependent).

The Department for Education (Transport Services Unit) should also be consulted during the preparation of these plans to ensure school bus routes and hours of operation are taken into consideration.

Due to the critical nature of the traffic impacts associated with this proposal, both the Road and Traffic Management Plans and the Road Infrastructure Agreements are recommended as Reserved Matters that must be prepared and approved prior to the provision of any final development authorisation.

5.7 *Social and Community Impacts*

Community - Guideline 8: The proposal is likely to lead to a change in The Kangaroo Island population (short term and long term) both during the construction and operational phases of the proposed development. This will lead to a change in demand for various services, infrastructure and accommodation needs on the Island at various times.

Chapter 22 of the EIS and Appendix Q relates to community and social impacts and assessment.

It is recognised that the social setting and environment of the island has changed in the immediate aftermath of the December 2019 / January 2020 bushfires with many communities, services,

infrastructure and the overarching social fabric of the island being significantly affected. Whilst recognising this, it should be noted that this assessment considers the longer term social impacts of the project over the operational life of the project (expected to be 25+ years).

The proposal is likely to lead to a change in the island's population (short-term and long-term) during the construction and operational phases of the proposed development. This would lead to a change in demand for various services, infrastructure and accommodation needs on the island at various times.

The population of Kangaroo Island is approximately 4,700 permanent residents. The island's population increases during peak holiday periods to almost double. The island has a relatively elderly and ageing population with the median age being 49, and the largest demographic profile being the age group of 55 to 64 years. It is recognised that the overall demographic of the island is ageing with the proportion of people aged between 65 and 74 rising from 9.9% to 13.7% between 2011 and 2015 (ABS 2016 Census) and the number of primary school enrolments decreasing by 34% between 1996 and 2016.

The Kangaroo Island Plan, a volume of the South Australian Planning Strategy, recognises the ageing population and generally declining numbers of young people.

Although the preference is to provide employment opportunities for existing residents on the island, it is recognised that the island does not have enough available labour to fill all of these positions, and as such it is likely that many of the new jobs will be filled by people not currently living on the island. The EIS estimated at least 60% of the total jobs would be taken by people currently living off the island, representing 140 FTE. It is acknowledged that in the immediate term, as a result of the bushfires resulting in many Islanders losing their productive means of employment, this figure may change as opportunities may arise for Islanders to be able to fill some of these roles. This is an assumption made due to the extenuating circumstances but has not been modelled for assessment purposes, as it considered an interim possibility. It is expected in the medium to long term, the figures presented in the EIS would be achieved.

Based on the EIS estimate of 140FTE being filled by people relocating to the island and assuming an average household size of 2.4 people in South Australia, it is estimated that the island's population would increase by approximately 336 people[218]. This represents an increase of approximately 7% to the island's permanent population. This population increase will result in an increase in demand for housing, which is likely to place demand on the existing rental and housing supply markets. The EIS estimated that more than 100 extra homes will be required to accommodate the predicted population increase[219].

Additional services for health, education, and community services will also be required to meet the expected growth in demand as a result of the increased population.

It is recognised that many of the services, community, sporting and social groups on Kangaroo Island are managed through the use of volunteers. The ongoing provision of these services will face challenges due to the ageing population of the Island, in particular the decline in the number of people aged under 55. Although the increased population may lead to an increase in demand for services, it is also likely to result in an increase in skills, experience and a younger population to the Island, which

[218] EIS Chapter 20, p446

[219] EIS Chapter 20, p446

presents opportunities to invigorate the island through increased employment, small businesses and participation in community and volunteer groups and sporting clubs.

Additionally, new residents, and the new housing associated with it, will generate additional revenue for the Council for use on the provision of community services.

The Kangaroo Island Council estimated that there are approximately 1300 vacant allotments on Kangaroo Island within the urban areas of Kingscote, Parndana, Penneshaw and American River that could be used to build new housing for the predicted increased population[220]. These are established townships with existing infrastructure and services that could support increased population. It is acknowledged that some human resources, such as education, childcare, health and medical professionals, may be needed to supplement the expansion of these services.

The EIS indicated that the proponent owns at least 30 residential allotments that could be created[221]. Existing planning policy does not support sub-division of forestry estates and a change in planning policy has neither been confirmed nor indicated by the Council or the State Government.

The EIS also included information on a new housing estate (of 78 allotments with house and land packages currently for sale) that has recently been established at Emu Bay[222], approximately 10km east of Smith Bay. This would help reduce potential strain on Kangaroo Island's residential housing market that is likely to result from the expected increased population associated with the proposal.

As the majority of the plantations are on the western end of the island, there is likely to be increased population in that area and in particular in Parndana, the closest township to Smith Bay, where the population has been in steady decline. It is the island's only inland town with a current population of approximately 150 people (Australian Bureau of Statistics 2016 census). It is an important service centre for the island that provides retail, community, sport and recreation facilities, primarily for the surrounding rural community. Its population has been in steady decline since a period of farm consolidation and switch to forestry in the 1990s and 2000s. Increased population in and around Parndana as a result of the proposal, would enable increased services (existing and new) that will support the wider western region of the island. It would also help with the island's recovery following the bushfires, acknowledging that the area around and the Parndana was severely affected.

During consultation, submissions raised the need to restimulate the timber industry based around Parndana to support the town and its services. The Parndana-based Kangaroo Island Community Club has identified its intention to subdivide and release housing allotments to the west of the Parndana township. (This is separate to this major development proposal and would be subject to separate planning approvals.) The EIS recognised this and to help stimulate the regional town of Parndana and promote new residents settling there, the proponent has committed to spending to 'provide a seed loan of up to $100,000 to cover the initial project costs prior to the marketing and sale of housing lots'[223].

The AR concludes that the proposal is likely to lead to a positive change in the population of Kangaroo Island and support local demand for various services, infrastructure and accommodation needs on the island. The initial demand for services and accommodation is likely to be temporary, with the housing and service markets adjusting with market forces to meet demand.

[220] EIS Chapter 22, p500
[221] EIS Chapter 22, p500
[222] EIS Chapter 22, p500
[223] EIS Chapter 22, p500

The influx of permanent residents to Kangaroo Island will also bring with them new skills creating opportunities, generating business, and increasing participation in community, volunteer and sporting groups.

The new residents and new housing will generate additional revenue for the Kangaroo Island Council for provision of community services.

Overall the impacts on the community as a result of the proposal are considered to be positive, with the capacity to reinvigorate the island's services and community groups and lead to the establishment of new infrastructure and services. For a region with a low and ageing population this is considered a significant benefit.

5.7.1 Heritage

Aboriginal and other Heritage - Guideline 16: Aboriginal and other heritage can include matters such as archaeological sites and Aboriginal remains, Aboriginal sites and objects of significance according to Aboriginal tradition, archaeology, anthropology or history, caves, mines, volcanic features, geological sites, fossils, historical buildings and monuments, relics of agricultural and industrial heritage, shipwrecks, lighthouses, whaling stations, wilderness and coastlines.
Coastal areas in particular are prone to discovery of items of Aboriginal heritage and significance.
All development should consider the impacts it may have upon Aboriginal and other heritage matters (land and marine).

EIS Chapter 24 and Appendix S relate to heritage.

Aboriginal and other heritage can include matters such as archaeological sites and Aboriginal remains, Aboriginal sites and objects of significance according to Aboriginal tradition, archaeology, anthropology or history, caves, mines, volcanic features, geological sites, fossils, historical buildings and monuments, relics of agricultural and industrial heritage, shipwrecks, lighthouses, whaling stations, wilderness and coastlines.

There are no state or local heritage listings within the subject site and no World Heritage, Commonwealth Heritage or National Heritage sites within the subject site or within the vicinity of the proposed development.

5.7.1.1 Indigenous

South Australia's *Aboriginal Heritage Act 1988* provides for the protection of Aboriginal archaeological sites, objects and remains, whether previously recorded or not. An Aboriginal site is defined under the Act 'as an area or land that is of significance according to Aboriginal tradition; or that is of significance to Aboriginal archaeology, anthropology or history.'

Kangaroo Island was once part of mainland Australia until approximately 10,000 years ago when rising sea levels isolated it from the mainland. Smith Bay is located on the north coast of the island. It is widely accepted that coastal areas are prone to discovery of items of Aboriginal heritage and significance.

The proponent engaged EBS Heritage to undertake an indigenous desktop heritage study, *Smith Bay Kangaroo Island Heritage Desktop Assessment* (2017), to inform the EIS. The EIS identified that Kangaroo Island has cultural significance to a number of Aboriginal groups including the Kaurna

(Adelaide Plains), Ramindjeri (Encounter Bay) and Ngarrindjeri (Lower Murray and Coorong) and that there is significant archaeological evidence on the island of Aboriginal occupation, although there were no people living on the island when Europeans arrived[224].

The EIS identified that prior to permanent European settlement on the island, from around 1803-1830, groups of sealers and whalers occupied Kangaroo Island on a seasonal basis and that some of these men settled on the island from the mid-1820s onwards with their 'wives' – Aboriginal women taken from the mainland and Tasmania[225].

The Department of the Premier and Cabinet, Aboriginal Affairs and Reconciliation (DPC-AAR) advised that Aboriginal occupation of Kangaroo Island has been dated to as recently as 400 years ago and that Aboriginal descendants currently live on the island.

The desktop study undertaken to inform the EIS identified that there are no listed Aboriginal heritage sites within the study area[226]. This does not eliminate the possibility that such sites do exist. DPC-AAR advised that the Smith Bay Artefact Site (comprising 40 artefacts) is located approximately 900m to the east of the subject site and that the nearby Smith Creek has potential for sub-surface Aboriginal heritage discoveries commonly associated with water courses.

As required by the *Aboriginal Heritage Act 1988*, the proponent has committed that if a potential Aboriginal heritage site was discovered, it would be reported to DPC-AAR[227].

In its submission on the EIS, DPC-AAR raised concerns that:

- an on-ground archaeological and anthropological survey had not been undertaken to inform the risk management and heritage discovery process
- only one Aboriginal group had been actively consulted by the proponent during the preparation of the EIS
- no contact with the Ramindjeri Heritage Association (who have advised an interest in Kangaroo Island) had occurred
- the EIS does not outline how ongoing engagement and consultation with all Aboriginal groups, including the Ramindjeri Heritage Association, would occur
- no commitment is given the preparation of an Aboriginal heritage survey.

In its response, the proponent committed to undertake an on-ground archaeological and anthropological survey with representatives of the Traditional Owners, prior to the start of construction works. It also committed to archaeological monitoring by the Traditional Owners during earthworks to detect possible subsurface deposits.

The proponent also engaged EBS Heritage to update the desktop heritage assessment. The existing report as presented in Appendix S1 of the EIS has been replaced by the *Smith Bay Kangaroo Island Heritage Assessment (Desktop) – Revised (2019)*. The revised assessment included an additional search of the Central Register with a wider radius from the site, inclusion of the approximate location of the Smith Bay Artefact Site, updated Predictive Risk Assessment, and acknowledgment of the coastal location of the project site as and nearby drainage features.

A risk assessment was undertaken in relation to the subject site, taking into account the review of existing reports, database search results, background research and the environmental landforms

[224] EIS Chapter 24, p515

[225] EIS Chapter 24, p515

[226] EIS Chapter 24, p518 and Appendix S5

[227] EIS Chapter 24, p523

within and near the project area. The findings showed that the soil surface layer of the Smith Bay site has been previously disturbed, and no sites or objects have yet to be found. As such it has been concluded that there is a low risk of encountering surface Aboriginal sites or objects within the subject site. However, the presence of an Aboriginal site approximately 900m to the east, along with proximity of the development area to the beach; and the presence of an ephemeral creek on the eastern side of the subject site and Smith Creek (which is located at its closest point 60m west of the subject site) suggest that the proposed works may pose a risk of encountering sub-surface Aboriginal sites or objects. This risk has been determined to be moderate to high[228].

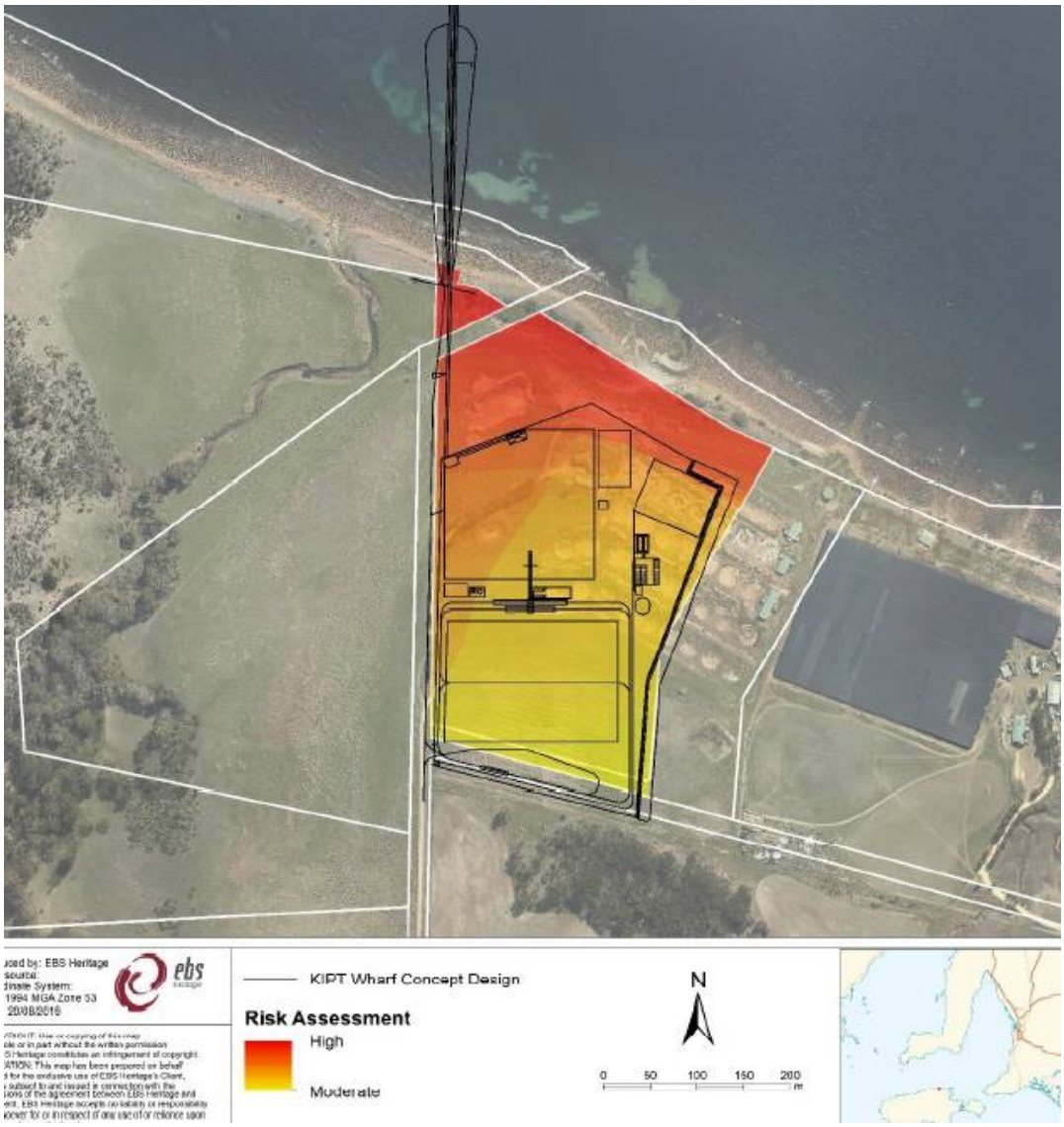


Figure 54: Risk assessment map (Figure 4 - EBS Heritage survey revised survey 2019)

The proponent advised it will have due consideration to this risk and has committed to preparing a Cultural Heritage Management Plan in consultation with the relevant Traditional Owners and with the assistance of the proponent's heritage provider. The plan must include, but not be limited to: an outline of legal obligations, details of any Aboriginal cultural heritage sites identified, consultation undertaken, and recommendations to manage the protection of Aboriginal heritage.

[228] Smith Bay Kangaroo Island Heritage Assessment (desktop) Revised 2019 - EBS

As there are parcels of Crown land within the subject site, these parcels may be subject to native title rights and interests. Currently there are no Native Title claims or Indigenous Land Use Agreements on Kangaroo Island, however the Ramindjeri, Ngarrindjeri and Kaurna have interests in the island. The proponent is obliged under the *Native Title Act 1993* to consult with appropriate representatives of these Aboriginal Groups in regard to any known sites of significance in the area and any Native Title Claims over the sea bed, adjacent and subjacent lands.

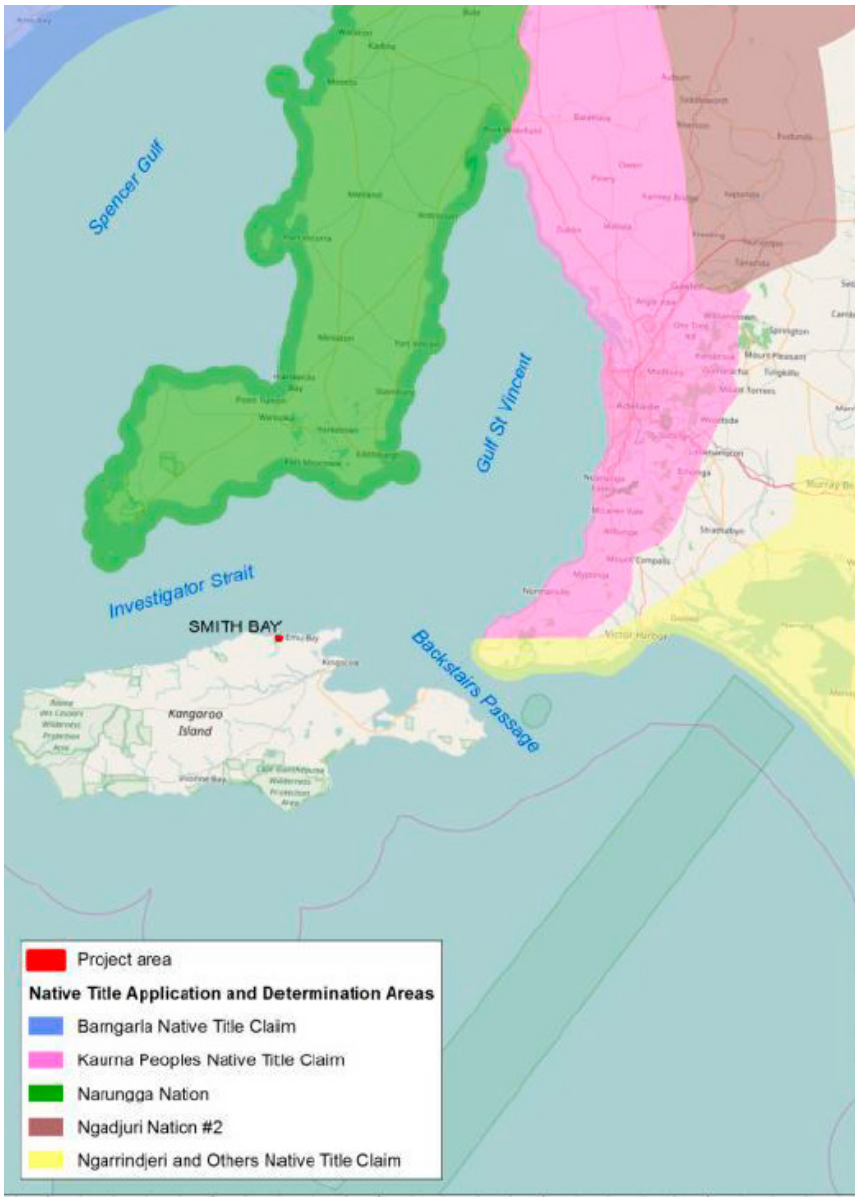


Figure 55: Native Title determination (Map 2 – Appendix S1 EBS Heritage survey 2017 - revised survey 2019)

The AR acknowledges that the subject site has been mostly cleared of vegetation and used for agricultural and commercial purposes over the last 100+ years. As such it is expected that any Aboriginal heritage sites would have been disturbed. Notwithstanding this and that there are no known Aboriginal heritage sites currently listed within the subject site, there are known Aboriginal artefacts located nearby, and as such, if approved, a ground Aboriginal heritage survey should be undertaken prior to any works at the site. The proponent is also obligated to consult with relevant Aboriginal Groups in relation to any known sites of significance in the area and any Native Title Claims over the land or sea bed.

It is assessed that Aboriginal heritage concerns can be adequately managed through the preparation and implementation of a Cultural Heritage Management Plan, including a risk management strategy to prevent the proposed works damaging, disturbing or interfering with any Aboriginal cultural heritage sites. This plan and associated risk management strategy, should be prepared in consultation with the Traditional Owners and Aboriginal heritage representatives prior to any ground disturbance works.

5.7.1.2 European

The proponent undertook two desktop heritage studies to inform the EIS:

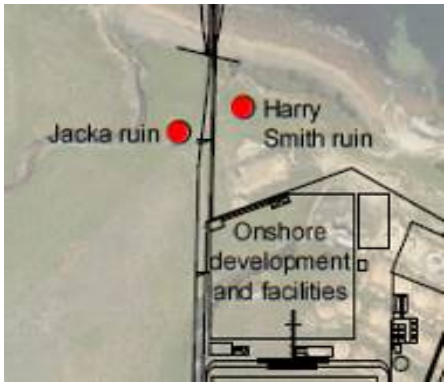
- *The Smith Bay European Settlement Desktop Assessment* (Bell and Austral Archaeology 2018); and
- *The Smith Bay Underwater Cultural Heritage Desktop Assessment* (Maritime Heritage Surveys 2017).

The EIS identified that the first known Europeans to visit Smith Bay were a party of sealers from Sydney in 1824 and that agricultural-related settlement most likely began near Smith Bay in the 1850s. It is recognised that the Turner family were the first permanent settlers within the Smith Bay area, settling there in 1882.

The pace of settlement increased substantially at the end of World War II with land grants provided to soldier settlers[229].

The island has a strong history of shipping, including for whaling and sealing in the early 1800s and then more recently for import, export and trade, with Investigator Strait becoming an important shipping lane. The EIS identified that numerous ships have been wrecked along the island's northern coastline and that between 1849 and 1982, 26 vessels were wrecked in the waters of Investigator Strait, although many remain undiscovered[230].

Although there are no state or local heritage listings on the subject land, the ruins of Harry Smith's house is located within the subject site and the Jacka family home ruin is located adjacent the site. Both ruins comprise remnant foundations and associated scattered rubble. In 2017 a nomination was made for these ruins to be included in the State Heritage Register which was not successful. Notwithstanding the lack of formal heritage recognition, the proposal has been designed to not impact upon these ruins and the proponent commits to protect the ruins of Harry Smith's house by fencing the site[231].



[229] EIS Chapter 24, p516
[230] EIS Chapter 24, p516 / DENR 2016
[231] EIS Chapter 24, p524

Figure 56: Location of local (non-listed) ruins in the vicnity of the subject site (EIS Figure 24-3)

Four shipwrecks are recorded in the vicinity of Smith Bay (*Chum*, *Vectis*, *Ruby* and *Cookaburra*) with *Chum*, being the closest to the subject site[232]. The Chum, Ruby and Vectis are protected under the Commonwealth *Historic Shipwrecks Act 1976.* None of these wrecks is listed as 'found' meaning that their exact location is unknown.

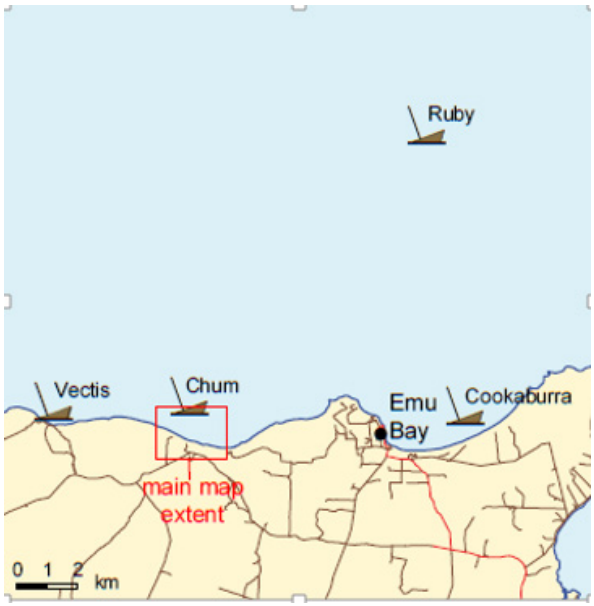


Figure 57: Shipwrecks in the vicinity of the subject site (EIS Figure 24-3)

The Underwater Cultural Heritage Desktop Assessment commissioned by the proponent concluded that it is unlikely that the wreck of the *Chum* is within the development footprint and that material from the wreck is unlikely to have survived within sediment deposits in Smith Bay[233]. The same study also concluded that the probability of material from the *Vectis*, *Ruby* and the *Cookaburra* being preserved within Smith Bay is low, based on the distances involved. Notwithstanding this, the possibility that shipwreck heritage material exists in the seabed remains, and as the proposal will extend approximately 650m into Smith Bay, there is a possibility that during the construction phase, materials may be discovered. Any potential discoveries must be reported to the Commonwealth Department of Agriculture, Water and the Environment.

The proponent committed to preparing a Heritage Management Plan that would include a site discovery protocol that details the steps to be taken if a non-Aboriginal artefact of potential heritage significance were discovered, (both terrestrial and maritime) including the reporting of any discovered items to the South Australian Heritage Council (a requirement of the *Heritage Places Act 1993*) or the Commonwealth as relevant[234].

The AR concludes that the likelihood of the proposal having an impact on non-indigenous heritage is low, and that the proponent's proposed measures to mitigate any potential impacts are satisfactory. It is considered that any impacts can be successfully managed through the preparation

[232] Based upon an underwater cultural heritage assessment including a search of the Australian national Shipwreck Database; EIS Chapter 24, p517 & 522

[233] EIS Chapter 24, p522

[234] EIS Chapter 24, p524

and implementation of a Heritage Management Plan, prepared in consultation with the Department for Environment and Water.

5.8 *Hazard and Risk Management*

Risks and Hazards - Guideline 14: The Kangaroo Island Development Plan, and the South Australian Planning Strategy promote development, including infrastructure, to be located away from areas that are vulnerable to the risk of hazards for both the protection of human health and the environment. Given the location of the proposed development, the following hazards include, but are not limited to: spills (including oil), flooding, fire (in particular heavy vehicle, timber yard and bushfire), site contamination, storage and movement of hazardous materials and landslip/coastal erosion. All risks and hazards need to be detailed and consideration given to how these risks and hazards will be avoided and managed.

This Assessment Report assesses the risks and hazards associated with the infrastructure and human health directly related to the Major Development proposal as required by the Guidelines. Risks and hazards associated with the plantations are outside the scope of the proposal and subject to different controls and management measures.

5.8.1 Fire

As the proposal involves the storage of combustible material (timber) there is a fire risk associated with the development.

The SA CFS advised that the same principles are applied to the storage and pile separation of timber as apply to rubber tyres. As such, the EIS identified that fire risks associated with the onsite woodchip storage would be managed in accordance with the *South Australian Fire Services Built Environs Section Guidelines No13: General Guidelines for Rubber Storage (South Australian Fire Authorities 2014)*, specifically:

- woodchips would be stored at a height and angle that maintain stockpile stability
- the stockpile would be arranged with suitable separation between it and surrounding infrastructure
- access would be maintained around the stockpile to give firefighters access during emergencies
- the woodchip stockpile would be kept at least 20m from the property boundary and from occupied buildings (offices) within the facility[235].

At the time of preparing the EIS, the majority of the proposed timber product to be stored on site was to be woodchips. It is acknowledged that the ratio of woodchips to logs may change as a result of the December 2019 / January 2020 fires. Notwithstanding, the same fire mitigation measures are expected to apply to both products regardless of volumes.

The EIS identified that a fire fighting water system would be established on site, consisting of a saltwater tank and pumping station, with the size, storage capacity and detailed design of the tank to be determined in consultation with the SA CFS and the Kangaroo Island Council[236].

The EIS also identified that the site layout would allow for unimpeded access by fire fighting vehicles to the tanks, and that should evacuation of the site be required, personnel would be directed via

[235] EIS Chapter 4, p83

[236] EIS Chapter 4, p84

Freeoak Road to the intersection of North Coast Road, or another point as determined during the detailed design phase[237].

The EIS does not detail specific design measures, the number of fire extinguishers to be kept on site, fire supressing equipment to be used on site, or personnel and on-site visitor education.

In its submission on the EIS the SA CFS raised concern that the only evacuation point would be via land with no fire bunkers on site. The SA CFS required further information including:

- maps and details on escape routes and refuges
- protocols that would be implemented, including CFS notification of the proponent's plans, for each Total Fire Ban Day
- details of both passive and active fire suppression systems
- location of bushfire buffers on the subject site.

The SA CFS advised that, if approved, these details must be incorporated in a Fire Safety and Hazard Management Plan prepared in consultation with the SA CFS. The Fire Safety and Hazard Management Plan must also include a commitment to ongoing liaison with the SA CFS.

The AR concludes that the storage of timber poses a risk of fire at the site. The SA CFS is satisfied that this risk can be satisfactorily managed through the development and implementation of a Fire Safety and Hazard Management Plan, prepared in consultation with the SA CFS.

5.8.2 Chemical storage on site (land)

Potential interactions with chemicals within the adjacent marine environment is discussed in Section 5.4.2.

Chemical pollutants can be defined as agricultural chemicals; cleaning agents; detergents and their by-products; engine coolant; fuel dispensing area washwater; oil, grease, lubricants and petroleum products; photographic chemicals; rubbish; and solvents[238].

The EIS identified that small amounts of oil and fuel may be stored on site as may be required for the permanent equipment at the site. The EIS specifies that a diesel fuel storage tank with a capacity of 20,000L will be located on site[239]. This does not exceed the 2000m^3 (which equates to 2ML) limit and as such is not considered 'bulk storage' pursuant to the *Environment Protection Act 1993* or its Regulations. A licence is not required for this storage. Notwithstanding, it is expected that any chemicals or petroleum stored on site comply with approved standards and management practices including the *Environment Protection (Water Quality) Policy 2015* and *Bunding and Spill Management Guidelines*. To comply with this, any chemicals for onsite use are to be stored on impervious surfaces and bunded to contain spillages and leaks in accordance with *EPA Guidelines Bunding and Spill Management* and to facilitate clean-up operations.

The EPA advised it was satisfied with the details contained in the EIS noting that if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate, and that fuel and chemical storage and handling will be covered by the EPA licence.

The EPA also advised that should, at any point in time, the storage or warehousing of chemicals or chemical products that are, or are to be, stored or kept in bulk or in containers having a capacity

[237] EIS Chapter 4, p84

[238] Environment Protection (Water Quality) Policy 2015

[239] EIS Chapter 4, p72

exceeding 200L with a total storage capacity exceeding 1,000m^3 at the facility, will constitute an activity of environmental significance and will require a licence.

The AR concludes that onsite chemical storage is expected to be minimal and can be satisfactorily managed through the EPA licence that the proponent must adhere to during the operational phase of the facility.

5.8.3 Climate Change

Climate Change and Sustainability - Guideline 13: Climate change is of State, National and global importance. This proposal includes elements adjacent to, and within, the coast and seabed. Measures need to be taken to both protect the proposed infrastructure in the longer term from the impacts of a changing climate and reduce any greenhouse gas emissions associated with its construction and use.

Chapter 19 of the EIS relates to climate change and sustainability.

The EIS assumed that an intermediate, stabilisation scenario is the most likely intermediate emissions scenario with the following climate changes predicted for Kangaroo Island by 2070[240]:

- total rainfall decrease by 7.9%
- rainfall intensity to increase by 8%
- average maximum temperature to increase by 1.2^{o}C
- average minimum temperature to decrease by 1.0^{o}C
- sea levels to rise by 33cm by 2070
- sea surface temperature to increase by 1.2^{o}C by 2090
- increase in extreme heat days (over 35^{o}C) from 7 to 10 days per year (based upon Victor Harbor which is the closest location to Smith Bay that has been modelled)
- increase in the number of severe fire dangers days per year on Kangaroo Island from 1.7 to 4.0 in 2090.

It is widely recognised and accepted that trees remove carbon dioxide from the atmosphere and help to mitigate the impacts of a changing climate. The EIS estimates that the total carbon sequestration of the timber plantations managed by the proponent is approximately 6.8 million tonnes of CO_2e. The EIS also identified that as individual plantations would be replanted or coppiced following harvesting, this amount of sequestration would remain relatively constant over the life of the operation[241].

The greenhouse gas emissions associated with the proposal (both direct – materials handling and on site electricity use, and indirect – transportation to and from the site) is estimated at 1700 tonnes of CO_2e[242]. When compared to existing and projected emissions estimates for South Australia and Australia, the emissions generated by the proposal (0.0008% of state emissions and 0.0003 of national emissions estimated for 2030)[243] are considered negligible.

Notwithstanding the relatively small contribution to the state and national greenhouse gas emissions, the EIS outlines mitigation and management measures (to be further explored during the detailed design) to reduce the proposal footprint, including:

- minimising electricity consumption through the use of energy-efficient infrastructure where possible

[240] EIS Chapter 19, p431
[241] EIS Chapter 15, p432
[242] EIS Chapter 19, Table 19-2
[243] EIS Chapter 19, Table 19-3

- installing solar photovoltaic panels to supply electricity to site buildings and site lighting (to be investigated during final detailed design)
- conducting regular maintenance schedules for site vehicles and haulage trucks
- using the most efficient permissible haulage trucks
- using the most direct permissible haulage route
- working with offtake partners to use the most efficient seagoing timber vessels possible and ship loading methods[244].

The EIS outlined following design and management measures to account for a changing climate and its potential impacts on the facility, including:

- designing the marine and coastal infrastructure to take into account a sea level rise of up to 0.83m by 2100
- taking into consideration the likely worst-case changes to magnitude and duration of rainfall events in the determining the size of surface water catchments
- designing onshore infrastructure to withstand expected change in surface temperatures and different wind conditions associated with increased storm intensity and frequency
- designing habitable buildings to promote passive cooling
- using a floating pontoon for the berth face[245].

The Addendum confirmed that the proposed mitigation and management measures outlined in the EIS would apply to the revised design.

The AR concludes that construction and operation of the proposal will result in negligible greenhouse gas emissions and, given the carbon sequestration of the plantations, emissions produced are adequately offset.

The design of the structure, including the use of the floating pontoon, has adequately considered the predicted climate change, and in particular the predicted sea level rise up to 2100, for Kangaroo Island. This is considered appropriate and reasonable.

6 Infrastructure requirements

Infrastructure Requirements - Guideline 15: The construction and operation of a port and wharf, such as that proposed at Smith Bay, will require specific infrastructure, equipment and utility needs. These need to be identified and consideration given to how these requirements will be met, and how any increased demand will impact upon existing users.

The proposed site is relatively remote from existing mains water supply, electricity supply, gas, sewer, stormwater and telecommunication networks.

Chapter 4 of the EIS relates to infrastructure requirements.

6.1 *Power Supply*

Electricity would be required at the site for timber handling equipment, office accommodation and associated facilities, some wharf infrastructure (e.g. mooring line retrieval capstans), operational lighting and general security.

[244] EIS Chapter 19, p433
[245] EIS Chapter 19, p434

The subject site is close to an 11kVa three-phase line. The EIS identified that there is sufficient capacity within the existing mains electrical system for provision of electricity to the site and for the operation of the facility, which is expected to have an annual consumption of 650MWh with a peak demand of 400kW[246].

To supplement mains supply, the EIS proposed that solar panels may be fitted to office and maintenance buildings and connected to a battery storage system with an approximate capacity of 20kW. A 635kVA diesel-fuelled generator would provide back-up electricity for the materials handling infrastructure and a second generator would serve as an emergency back-up[247]. Further renewable energy sources may be considered at a later stage[248].

The Addendum identified that it is expected that there would be a marginal increase in electricity demand and diesel fuel as a consequence of the extended in-water structure, however the electricity and diesel supply strategies as outlined in the EIS are not affected[249].

The AR notes that electricity use of the proposal can be met within the existing capacity of the network. The AR also notes the use of solar panels with battery storage for use at the site. Any potential future augmentation through the use of larger scale renewables by the proponent will be subject to separate approvals.

6.2 *Water Supply*

Stormwater Management is discussed in detail at Section 5.4.8.

Water supply will be required at the site for dust suppression, fire suppression and potable supplies.

The EIS identified an expected use of 500L per day for staff ablutions and drinking water; and a peak use of up to 10,000L per day when required for fire suppression. The EIS proposed a storage tank(s) with a capacity up to 54,000L for dust suppression purposes, a tank(s) with a capacity of up to 46,000L of potable water, and separate tank(s) for fire suppression water[250]. The size of the firefighting tank(s) would be determined during detailed design in consultation with the Country Fire Service[251].

The EIS proposed that dust suppression and firefighting water demands would be met through a combination of surface water runoff and fresh imported water and/or reclaimed seawater during extended periods with reduced rainfall[252].

The EIS identified that potable water requirements would be met through the capture of onsite roof runoff, supplemented as necessary through delivery of roof runoff captured at the Timber Creek Road operations base (which has approximately 5400m^2 of roof area) and is owned by the proponent. This would require the installation of relevant infrastructure at that site[253].

With an average rainfall of ranging between 15mm/month (January) and 70mm/month (July), the combined captured roof runoff from both sites would supply an average of between 81,000 to

[246] EIS Chapter 4, p86
[247] EIS Chapter 4, p87
[248] EIS Chapter 4, p87
[249] First Addendum Chapter 3, p13
[250] EIS Chapter 4, p87
[251] EIS Chapter 4, p84
[252] EIS Chapter 4, p87
[253] EIS Chapter 4, p87

380,000L per month. The EIS identified that when necessary due to low rainfall, water may be imported to site through approved/licences providers on the island or via barge from the mainland.

The AR concludes that adequate water supplies for the site can be achieved through the combined capture and use of onsite stormwater at the site and, subject to stormwater management infrastructure upgrades, the Timber Creek Road facilities (also owned by the proponent) supplemented by imported water has required.

The AR notes that firefighting water requirements will be negotiated with the CFS during detailed design.

6.3 *Effluent Treatment and Disposal*

Waste Management is discussed in detail at Section 5.4.9.

The EIS identified that a septic tank with a working capacity of 16,500L (with a total tank capacity of 22,000L) would capture sewerage effluent at the site, which would be collected and removed through a licenced waste truck/operator[254].

The EIS did not identify the frequency of removal of liquid effluent from the site. The Kangaroo Island Council requires that all septic tanks be de-sludged (i.e. removal of solid waste) every four years, irrespective of type, in line with the SA Health requirements.

In its submission the EPA requested further information regarding the on-site wastewater management system, including frequency of removal, the equivalent persons on which the sizing is based, and an assessment that this is adequately sized for the proposed workforce and all other requirements for holding tanks as per the *SA Health On-site Wastewater Systems Code (April 2013)*.

The proponent advised that temporary solutions for sewage management would be established for the construction workforce, effective immediately at the time of site mobilisation and that these systems will remain in place until such time as the permanent operational sewage management system is built and commissioned.

The number of onsite employees using the ablutions will vary depending on the activity at the port. The EIS identified that the direct workforce at the site will be up to 11 FTE permanent staff with an additional 10-14 staff during ship loading activities (up to 40 days per year)[255]. It is also expected that there will be usage of the ablutions by the timber haulage staff who will be visiting the subject site on a continual basis year round. The proposed sizing of the tank was based upon these figures.

The proponent advised that the specifics of the permanent operational sewage management system would be finalised during the detailed design phase of the project and that the objective would be to ensure best waste management practices are adopted.

The proponent stated that wastewater generated from sewage will not be used for land application and committed that the septic system would adhere to AS1546.1 and the *SA Health On-site Wastewater Systems Code (April 2013)* including design, capacity, location, setbacks and maintenance

[254] EIS Chapter 4, p91

[255] EIS Chapter 4, p88

considerations; and that appropriate permitting and/or licensing will be obtained prior with the relevant agencies.

The EPA noted that de-sludging of solid waste will occur every 4 years (however frequency of removal of the liquid waste was not specified). The EPA advised that if no irrigation or soakage onsite is to occur, an onsite holding tank will be required in addition to the septic tank to hold the liquid effluent waste after the removal of solid waste.

The proponent committed to discuss this further with the EPA and advised that the specifics of the sewage management system would be finalised in detailed design phase of the project.

The AR concludes that as the number of onsite staff is limited, adequate effluent treatment and disposal can be achieved through the measures outlined in the EIS.

If approved, further discussion with the Environment Protection Authority and the Kangaroo Island Council (who has responsibility for administration of the SA Health on-site wastewater systems code) will be required and the relevant approval secured, in relation to the specifics of the sewage management system.

7 Construction and Operational Effects

Construction and Operation - Guideline 19: During the construction and operation of a large infrastructure project, such as what is proposed at Smith Bay, there will be a range of standard impacts that can occur. Many of these can be adequately managed through construction and operational environmental management plans. As the wharf is proposed to be multi-user, information is needed on who the other potential users may be and how often it is anticipated to be used for other purposes.

The EIS included an Environmental Management Framework at Chapter 26 and Appendix U.

The Framework includes the commitment to prepare a Construction Environmental Management Plan (CEMP) and an Operational Environmental Management Plan (OEMP).

The following draft Plans were provided: CEMP (Appendix U1); OEMP (Appendix U2; Emergency Response Management Plan (Appendix U3); Bush Fire Hazard Management Plan (Appendix U4); and Waste Minimisation Management Plan (Appendix U5).

It is noted that the draft plans were prepared for the purpose of public consultation only. If approval is granted, the plans will be required to be updated and finalised. Any plans required as a condition of approval must be submitted to the Minister for Planning and Local Government or relevant government agency for approval.

The EIS made a commitment that the activities at the site would be undertaken in accordance with the plans. This AR outlines that in addition to a CEMP and OEMP, a range of specific management plans would be required. These plans must cover both the onshore and offshore components of the proposal as relevant. The preparation and implementation of these plans would be conditions of any approval. A component of each of these plans would be the requirement for them to be reviewed on a regular basis and updated where necessary to reflect any changes in the design or operation of the site or unforeseen circumstances.

In addition to the plans, the construction and operation of the proposal will be subject to other approvals and legislative requirements at both the state and Commonwealth level that must be met, including permits and/or licences for specific activities. The plans must refer to the conditions of these authorities/licences, ensuring that all works comply.

The proponent committed to the development and implementation of a communication strategy during the construction and operation of the proposal[256]. This could be a component of the required CEMP and OEMP if approved.

The EIS identified that third party access to the wharf may be granted for the export or import other products (e.g. primary produce or extractive minerals) subject to the third party undertaking the relevant environmental and social impact assessments and following the granting of relevant government approvals. The EIS committed to this access to the extent that it will not interfere with the proponent's operations and/or have a detrimental impact on the proponent's relationship with its key stakeholders (including the independent timber growers and neighbouring properties and operations)[257].

The EIS also identified that third party users would be permitted to use the light vehicle parking provided at the site however heavy vehicle parking of third party vehicles would not be allowed for within the facility, and thus any future consents associated with third party use would need to address heavy vehicle parking (if required)[258].

The EIS identified that the proponent has had informal discussions with a number of parties to clarify whether other users may be interested in using the facility; however whether other users see opportunities to use the facility is beyond the proponent's control and the private commercial considerations of third parties would determine these outcomes and the extent that such other uses eventuated, these would be the subject of separate assessment and approvals processes that would be the responsibility of the individual proponents [259]. As such, the EIS did not contain detail of other users or the potential impacts of any other uses.

The AR concludes that if approved, the development and implementation of a Construction Environmental Management Plan (CEMP) and an Operational Environmental Management Plan (OEMP) would be required and, as detailed throughout the AR, a range of other detailed specific Management Plans would also be required. These plans must be prepared in consultation with relevant agencies and the Council as required. Combined, these plans will guide detailed design, site establishment, construction and operation of the proposal. In order to detect any changes to the site or the surrounding environment and to measure the effectiveness of mitigation measures, targeted monitoring should be addressed in each of the plans.

In addition to the CEMP and OEMP, if approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Several of the potential operational environmental impacts will be covered by the licence.

The AR acknowledges that the facility has been designed to accommodate third party users, and that the proponent has undertaken preliminary investigations into potential alternative uses. The AR concludes that as any potential users are not known at this stage, it is reasonable that no impact assessment has been undertaken in relation to this. It is understood that, if approved, the

[256] EIS Chapter 26, p 539
[257] EIS Chapter 4, p84
[258] EIS Chapter 21, p463
[259] EIS Chapter 2, p19

proponent would own and operate the facility for its own purposes, and any third party users would be subject to separate assessment and approvals processes. Impact assessment of any such use would occur at that time.

7.1 *Project Closure*

Many submissions received queried the consequence if the company ceased to operate, or was sold.

The EIS does not contain a full plan for the rehabilitation or decommissioning of the facility after operations at the site have ceased. A full plan was not expected at this time.

The EIS identified that after operations have ceased, the project-related infrastructure would be removed and the site rehabilitated so the landscape matched the pre-operational landscape and/or was returned to a condition similar to that of the surrounding landscape; and that it is anticipated that the pre-operational land use (agriculture and/or aquaculture) may be resumed[260].

The EIS included a basic outline of activities that would be undertaken prior to and at closure.

The EIS also identified that should the operation of the site be suspended temporarily (i.e. an unplanned closure) that an interim care and maintenance plan would be prepared and that relevant government agencies would be notified of the nature of the suspension and measures in place to limit impact on the environment. Should the temporary closure extend beyond 2 years, the EIS identified that a full decommissioning and rehabilitation plan would be prepared. [261].

The Addendum identified that the objectives and strategies for project closure do not change with the design change[262].

It is expected that a Decommissioning and Rehabilitation Plan would be prepared in consultation with the relevant government agencies and the Kangaroo Island Council prior to the commencement of decommissioning.

Recognising the nature of the facility and that it has been designed to accommodate third party users, there is an opportunity for the facility to be transferred to another party. This option should be investigated prior to the preparation of the Decommissioning and Rehabilitation Plan.

If the proponent's assets or operations were to be acquired by another company, any approval, and associated conditions, would be the responsibility of the new owner.

The AR concludes that, post-operation, the decommissioning and rehabilitation of the site can be adequately managed through the development and implementation of a Decommissioning and Rehabilitation Plan prepared in consultation with relevant government agencies and the Kangaroo Island Council. Prior to any decommissioning, avenues should be pursued regarding the potential transfer of the infrastructure.

[260] EIS Chapter 4, p91

[261] EIS Chapter 4, p92

[262] First Addendum Chapter 3, p13

8 Management Mitigation and Monitoring

For Major Development proposals, the mitigation of impacts and monitoring of their effectiveness (including contingencies for further mitigation) is undertaken via an Environmental Management Framework for the construction and operational phases. For consistency with other proposals, the title of the environmental management plans should be a Construction Environmental Management Plan - CEMP and an Operational Environmental Management Plan - OEMP. These plans provide the umbrella documents, under which other issue specific Management Plans sit.

The EIS included a draft environmental management framework (Chapter 26) including draft CEMP and OEMP (including protocols and the types of matters that would be addressed). There are various details about mitigation measures and management procedures that have not been addressed in detail in the EIS. These matters have largely been deferred to the preparation of final plans within the framework. This is acceptable as it is not expected that a proponent would prepare these plans in detail prior to approval.

The EIS also identified detailed stand-alone management plans that would be prepared to address specific issues[263].

Whilst the full details were not provided at this stage, the EIS demonstrated the proponent's commitments to sound environmental management. Table 26-1 of the EIS outlined environmental aspects, objectives and potential impacts to be managed as identified by the proponent. If the proposal is approved, the preparation and implementation of the CEMP and OEMP (and associated other issue specific Management Plans) would be conditional requirements with input from technical experts within relevant government agencies (and Council where relevant). The CEMP and OEMP would need to incorporate relevant aspects related to detailed design, site establishment, construction and operational matters from the range of management type plans identified in the EIS, the Addendums, Response Document and this assessment.

The plans should address:

- objectives for environmental management
- performance criteria to be met
- relevant legislative requirements and standards, codes and guidelines (especially those prepared by the EPA)
- management actions, including responsibilities and timing
- monitoring regimes and corrective actions
- requirements for reporting and auditing
- incident and emergency response processes.

The proponent made several commitments, including, but not limited to:

- all activities at Smith Bay would be undertaken in accordance with the EMPs
- the Environmental Management Framework would be reviewed regularly, updated and improved where necessary (and include an assessment of the effectiveness of management measures in achieving stated objectives)
- the EMF and EMPs would also be reviewed in response to a change in the scope and/or design of the development changes in regulatory standards and reported non-compliances
- development of a communication strategy to inform stakeholders and the community during construction and operation of the facility.

[263] Chapter 26, p542

In addition to the above, Chapter 27 of the EIS included a list of explicit commitment made throughout the documentation in relation to details of the proposal. The list was reviewed and amended in the Addendum (Chapter 7), removing commitments that no longer applied and modifying where required as a result of the revised design and as the understanding of the construction methodology matured.

To ensure compliance with the conditions and the suite of management and monitoring plans that will be required as conditions of any approval, it is recommended that a cross-agency governance group be established including the Commonwealth Department of Agriculture, Water and the Environment and the Kangaroo Island Council where relevant, to ensure effective and responsive monitoring is being adhered to by the proponent. This group should exist during the construction period, and for no less than 2 years of operation of the facility. Following this period, the arrangement should be reviewed.

Should it be determined that the proponent is not meeting conditioned compliance requirements, the Minister for Planning and Local Government has the power to direct the proponent to make good any breach in compliance, and may also necessary take action including cessation of the operation of the development.

9 South Australian Planning Strategy and the Planning and Design Code

Although assessment of Major Developments principally occurs against the required documentation, in this case, an EIS (and associated Addendums), consideration is also given to the relevant volume of the South Australian Planning Strategy and relevant planning policies of the Planning and Design Code. Relevant provisions and policies of the Planning Strategy and the Code can be found at Appendix 2.

9.1 *Planning Strategy*

The subject site is located within the area covered by the Kangaroo Island Plan (2011), a volume of the Planning Strategy for South Australia, which sets out strategies, policies and directions for the region and is used to guide land use and development within the region.

The State Planning Policies (SPPs) came into effect on 23 May 2019 as an instrument of the *Planning, Development and Infrastructure Act 2016* (PDI Act). The SPPs are the highest order policy document in South Australia's land use planning system. They outline matters of importance to the state in land use planning and development. They address key, strategic priorities for South Australia and aim to encourage the growth of healthy regional economies through new land uses and the adoption of emerging technologies.

The following SPPs are considered relevant for this proposal:

> SPP 13 – Coastal Environment: OBJ To protect and enhance the coastal and marine environment and ensure that development is not at risk from coastal hazards.
>
> SPP 14 – Water Security and Quality: OBJ Water is one of South Australia's most valuable natural resources. Access to a safe and reliable water supply is essential to support our communities and our diverse economy. Our water dependent ecosystems also rely on access to water so that they can continue to provide cultural, aesthetic, amenity, recreational and tourism benefits. It is therefore vital that we continue to protect and plan for our water now and into the future.

Pursuant to the PDI Act, Regional Plans must reflect the SPPs. Regional Plans, including the Kangaroo Island Plan have not been updated since the SPPs came into effect. As such the existing Kangaroo Island Plan (2011) remains relevant for this proposal.

The PDI Act also requires that an EIS includes an assessment against any relevant SPPs. As the EIS for this proposal was prepared prior to the SPPs coming into effect and that the transitional arrangements specify that assessment of declared Major Developments yet to be decided will continue pursuant to the *Development Act 1993*, assessment against the SPPs is not required for this proposal. Notwithstanding, the existing Kangaroo Island Plan is not inconsistent with the SPPs considered relevant for this proposal.

Kangaroo Island is recognised as a national and international tourist destination known for its pristine environment, abundant wildlife and unique food products. The Kangaroo Island Plan seeks to promote economic growth for the region in particular through tourism (and value-adding activities) and primary production (development and diversification) as well as attracting industry, particularly where there is infrastructure capacity for growth (for example, electricity, roads and shipping) and attracting and retaining a highly skilled and flexible workforce to encourage a stronger economic base.

The Kangaroo Island Plan recognises that population and economic growth must be balanced with protection of the environment, including biodiversity, and retention of the region's unique qualities for the benefit of future generations and to attract and retain skilled workers.

The Kangaroo Island Plan recognises the role that primary production, including horticulture and viticulture, sheep meat and wool products, forestry and associated processing, fishing and aquaculture plays on the island's economy. The plan supports the creation of employment opportunities, in particular to help retain young people on the island, and identifies that increasing the amount of value-adding may have potential for employment growth. Economic growth is likely to occur in existing primary production sectors and so opportunities in emerging industries should also be supported. The plan also recognises the need to strengthen and improve social services and opportunities on the island.

The South Australian Government is planning for an additional 1510 residents on Kangaroo Island over the next 30 years. Economic development will play a key role in facilitating this growth through providing employment opportunities.

Relevant principles and policies of the Region Plan are contained in Appendix 1.

The subject site, although located on the coast, is not a known area of significant or high value biodiversity compared to other locations on the island, nor is it a location of significant landscape or amenity value. It is not located near any towns or key tourist areas or within, or in close proximity to, either a State or Australian Marine Park.

The proposal will generate employment for the island (both during construction and ongoing), which will support the plan's desire for employment growth and creation of new opportunities in emerging industries. Timber plantations were previously established on the island to help facilitate the development of a new industry. The proposal will value-add to this industry and will provide a future for the industry on the island that otherwise would be lost (i.e. if the existing timber cannot be removed, future rotations, and the economy and employment opportunities associated with that would not be realised).

The proposal is expected to result in an increase to the island's population (both during construction and ongoing) and the creation of jobs will likely retain some of the existing population that may otherwise leave the region to seek employment on the mainland. Both of which will support the State Government's vision for an additional 1510 residents on Kangaroo Island over the next 30 years.

Although it will have some impact on the adjacent marine environment, with the amended design and implementation of specific management plans, on balance, the proposal is not considered to be significantly at variance with the principles of the Kangaroo Island Plan.

9.2 *Planning and Design Code*

Since the proposal was declared and the EIS, Addendum and 2nd Addendum were prepared, the Planning and Design Code (the Code) has become operational across the entire state (effective 19 March 2021).

It is acknowledged that at the time of preparation of the EIS, the Code had not been enacted and as such, the EIS considered the relevant provisions of the Kangaroo Island Development Plan. As this assessment is post the implementation of the Code, the application has been considered in the context of the planning policies contained within the Planning and Design Code.

It should be noted that the assessment of a Major Development proposal only has to have regard to the policies of the Planning and Design Code, unlike a standard development application that has to be in general accordance with the policies (especially for the Zone).

The onshore elements of the proposal are within the Conservation Zone, and Visitor Experience Subzone and the offshore elements are within the Coastal Waters and Offshore Islands Zone.

For the onshore components, the following overlays are relevant: Coastal Areas; Hazards (Flooding); Hazards (Bushfire medium risk); Native Vegetation; Significant Landscapes Protection and Historic Shipwrecks (Federal).

Relevant desired outcomes and performance outcomes of the Code are contained in Appendix 1.

The **Conservation Zone** policies seeks to preserve the natural environmental and ecological processes, scenic qualities, landscape, habitat and biodiversity values of the coast, and aims to ensure that development does not harm the coastal environment. They also recognise the need to protect existing aquaculture operations.

Envisaged land uses include small-scale, low-impact development that protects the area whilst allowing public experience of the environmental assets. In addition to small-scale development, the policies allow for farming activities to occur on land outside areas of native vegetation or areas that have already been cleared.

A port or export facility is not listed as accepted, performance assessed or restricted development within either the Conservation Zone or the Coastal and Offshore Islands Zone.

The Built Form and Character provisions of the Zone include policy objectives for buildings and structures to be sited and designed to minimise impacts on the natural environment (including minimising the extent of earthworks) and to minimise the visual impact through use of vegetation screening, materials and finishes and location.

Policies also seek that vehicle access should limit impact on the natural environment and that roads be designed to encourage low speeds and reduce environmental impacts.

The desired outcomes of the **Coastal and Offshore Islands Zone** are to protect and enhance the marine environment and ensure that development is undertaken in a manner that minimises harm on the marine environment.

The **Visitor Experience Subzone** allows for tourist accommodation that complements the visitor experience of the area and is sited and located to minimise impacts on the natural environment and ecological processes. The Zone envisages limited small-scale, low-impact developments that support conservation, navigation, science, recreation, tourism and/or aquaculture. Policy specifically seeks that harm should not arise from actions that introduce a biosecurity risk, and that pollution (including turbidity and sedimentation) and impacts to water flows is to be avoided. The protection of nesting and breeding areas and the movement / migration patterns of fauna is also referenced.

The **Coastal Areas Overlay** seeks to conserve and enhance the natural coastal environment and processes and seeks development that accounts for future coastal hazards including sea level rise and sea flood risk. Policies seek to ensure development will not create or aggravate coastal erosion, unreasonably affect the marine and onshore coastal environment, result in impacts upon important habitat areas that support fauna, or introduce or spread marine pests. Development should be designed that wastewater and stormwater is disposed of in a manner that avoids pollution or other detrimental impacts on the marine and on-shore environment.

The **Significant Landscape Protection Overlay** seeks the protection and conservation of the natural and rural character and scenic and cultural qualities of significant landscapes, and that development that is inconsistent with preserving these qualities is not undertaken.

The **Native Vegetation Overlay** aims to protect, retain and restore areas of native vegetation.

The **Hazards (Flooding) Overlay** seeks to minimise impacts of flooding and that development does not impede the flow of floodwaters through the site or cause unacceptable flood impacts on any adjoining property.

The **Hazards (Bushfire Medium risk)** Overlay sees development that does not result in an increase in the threat and/or impact of bushfires on life and property, and that appropriate access is provided for emergency service vehicles.

The **Historic Shipwrecks Overlay** seeks to ensure that shipwrecks and historic relics are protected from development.

General Code policy contains policies relevant to bulk handling and storage facilities and interface between land uses. Bulk handling and storage facility policy specifies that development should be designed to minimise adverse impacts on transport networks, landscapes and surrounding authorised and envisaged land uses. In particular, these facilities should minimise adverse air quality, noise and light spill impacts on other receivers or lawfully approved uses.

Policy related to hours of use is also included in that non-residential development should not unreasonably impact on the amenity of receivers or an adjacent zone that is primarily for sensitive receivers (i.e. residential) and that measures should be taken to mitigate off-site impacts.

General Code policy includes that marinas and on-water structures are sited and designed to facilitate water circulation and exchange.

It is expected that the proposal will have some impact on the coastal environment, however the area is already subject to a commercial operation and is not a known area of significant or high value biodiversity, nor is it a location of significant landscape or amenity value or a tourist area.

The proposal includes, and can be further enhanced through the use of landscaping, siting and external finishes to minimise visual impacts and blend in with the surrounding landscape as reasonably practicable, however it is noted that a facility of this scale will have a visual impact.

The facility's design incorporates measures to mitigate an expected rise in sea level and minimise the risk of hazards, most notably the facility's design includes the use of a floating pontoon which could accommodate a future rise in sea level.

Although provisions of the Code seek to maintain public access to coastal areas and the foreshore, Smith Bay is not a coastal or beach area generally accessed by the public or tourists, and to ensure public safety and security, public access to the areas associated with the wharf, and a section of the coast would be restricted during construction and wharf operations. This is considered an appropriate safety and risk-avoidance measure.

The EIS included extensive studies and modelling in relation to the marine environment, considered potential impacts on the adjacent commercial abalone facility, and proposed a range of mitigation and management strategies to minimise impacts. Investigations were also undertaken in relation to air quality, dust, noise, light and traffic and identified expected impacts on surrounding land users. With the implementation of specific management plans many of these can be successfully mitigated and managed, however further work is required on several issues. This can be undertaken in consultation with relevant agencies during the preparation of a range of management plans.

Whilst it may not be considered that the proposal will enhance the natural coastal environment, the amended design of the in-water elements of the proposal will facilitate water circulation and exchange and will not interrupt coastal flows or processes within the bay.

The marine environment of Smith Bay supports a range of species, of particular note cetaceans. The Southern right whale is a listed endangered species under the EPBC Act, however the bay is not considered a breeding area for the species. Various species of dolphins also visit the bay but do not breed there. Smith Bay does not support any rare species and is not within a Marine Park.

The EIS and 2nd Addendum included management strategies to avoid contamination and introduction of pest species. The EIS also included extensive studies and investigations identifying expected emissions impacts (in particular dust, light and noise) on surrounding land users and the marine environment. With the implementation of specific management plans, prepared in consultation with relevant agencies, and regular monitoring and review, it is considered that these impacts can be managed. However due to the requirements of the immediately adjacent aquaculture facility, there remains a risk that these impacts may not be able to be fully mitigated.

The 2nd Addendum sought reduced hours of haulage and, following advice from agencies, a further reduction in hours was proposed. This will assist to mitigate the impacts on the amenity of sensitive receivers nearby the port and along the transport route.

The Code requires that measures should be taken to mitigate off-site impacts. This is particularly relevant in relation to traffic impacts associated with the proposal. Should the proposal be approved a Traffic Management Plan will be required. This plan must outline measures to mitigate haulage traffic impacts on the island's road infrastructure and other road users. Other Management Plans will also be required that must include measures to mitigate haulage traffic impacts on native fauna.

10 Conclusion

The proposal would result in a significant economic benefit to the region through the provision of a key piece of infrastructure for Kangaroo Island that would enable the existing forestry plantations to be harvested. This would unlock additional capital investment on the island and enable future rotations to occur, providing additional economic and employment benefits (both direct and indirect) to the region. In addition, the establishment of a port facility would provide an alternative option for the import and export of other goods to and from the island (subject to separate approvals).

The construction and operation of the proposal would be expected to result in an increase in the island's population, creating opportunities for supporting services (further enhancing employment opportunities), community, sporting, volunteer and social groups. As a result, some short-term housing pressure and demand would be associated with the proposal.

The assessment also finds that the proposal is not without significant risk. Key concerns include biosecurity, impacts on the adjacent abalone facility, traffic and road impacts, and fauna strike. None of these risks can be completely avoided, but can be appropriately managed and mitigated through appropriate construction and operational conditions. The acceptability of the development is therefore reliant on the successful implementation of a series of management plans, which must continue to be actively followed for the life of the development. Any related project or third party opportunities in the future will need to be carefully considered.

Many of the potential impacts associated with water quality have been substantially decreased with the amended design (as per the Addendum). However, the redesign does not remove the potential for biosecurity impacts. Of particular concern is the potential introduction of pests though ballast water exchange from the 'same risk' area of Port Adelaide, which is known to contain established marine pests not present within the waters of Kangaroo Island. Careful management and mitigation measures are required to manage this risk. As the biosecurity risk is of significant importance to both the continued operation of the adjacent aquaculture facility and Kangaroo Island as a whole, the implementation of a Marine Pest Management Plan and Biosecurity Management Plan is critical. It is recommended that these be further developed and approved prior to any final authorisation for the proposal.

There is likely to be some dust impacts on the adjacent aquaculture facility resulting from the construction and operation of the proposal. Although modelling indicated that this will be minimal, and the Environment Protection Authority advised that the expected increase is within acceptable criteria, there remains potential that, if not adequately managed, longer term dust build up may impact the aquaculture facility and its operations. Management and mitigation measures need to be further explored in relation to this, including protocols for when works may need to cease or be modified. Advice from a marine biologist with expertise in abalone is recommended. Dust monitoring (including real-time monitoring at the boundary of the site) and reporting will be requirements of any approval. If approved, the proponent must obtain a licence under the *Environment Protection Act 1993* before the facility is able to operate. Air quality impact issues during the operational stage will be covered by this licence.

Noise associated with the operation of the proposal is expected to exceed the relevant Indicative Noise Level criteria at the adjacent aquaculture facility and the Environment Protection Authority advised that it is not satisfied that the proponent has demonstrated that they have met the General Environmental Duty. However, overall, it is considered that the risk of impact on human health associated with operational noise impacts are low, and if approved, outstanding noise issues could be dealt with in the final design of the facility, noting the adjoining industrial land use. The sealing of the

section of North Coast Road that abuts the adjacent abalone farm (i.e. from Emu Bay to Smith Bay) is critical to minimise noise impacts from associated haulage, which directly past the facility and nearby residences.

The issue of cumulative impacts of dust, light and noise on the adjacent abalone facility requires careful consideration. It is considered that these impacts can be managed through a suite of management plans with effective implementation being critical to ensure that cumulative impacts are suitably managed.

The proposal has significant traffic and transport impacts, regardless of the route taken, due to the significant increase in the volumes of heavy vehicles proposed. This would result in the need for substantial road upgrades and ongoing maintenance to accommodate the proposal and minimise the potential impacts on other road users' safety (including tourists and school buses). Potential fauna strike, in particular the endangered Kangaroo Island echidna and Rosenberg's goanna, is also an issue.

The proponent originally sought 24/7 use of the road network, which was not supported. In its 2nd Addendum the proponent proposed 6.00am to 6.00pm Monday to Friday, and some Saturday morning hours of haulage. There remain impacts associated with these proposed hours, in particular fauna strike. Hours of haulage must be further explored in required Traffic Management Plans, prepared in consultation with the Kangaroo Island Council and/or the Department for Infrastructure and Transport. The Department for Education (Transport Services Unit) must be consulted to ensure school bus routes are taken into consideration.

The use of the route identified by the Department for Infrastructure and Transport is supported in principle. Finalisation of the details of this route, along with required upgrades must be identified prior to operation of the facility. Funding can be managed through Road Infrastructure Agreements with the Kangaroo Island Council and/or the Department for Infrastructure and Transport (road dependent). As these are critical components to the successful mitigation of significant impacts, it is recommended that they be prepared and approved prior to any final approval of the proposal.

A condition of any approval will require the proponent to prepare and implement a complaints strategy that identifies how a person can raise a complaint (and to whom), includes a management procedure for complaints, and a publicly available complaints register that records the complaint received and how it was responded to.

The Commonwealth determined that the proposal was a 'controlled action' (*Environment Protection and Biodiversity Conservation Act 1999*) as a result of potential impacts on several species including the Southern right whale and Kangaroo Island echidna. The assessment concludes that impacts on the Southern right whale will be low and temporary in nature. In relation to the echidna, the proponent proposed an offset package to reduce the threat to echidnas from feral cats. Based upon advice received from the Commonwealth, the assessment concludes that this offset is satisfactory.

The proposal aligns with the Kangaroo Island Plan to build on the island's strategic infrastructure and sustain steady economic growth. The Kangaroo Island Plan identifies the need to encourage employment opportunities in value-adding to primary production and emerging industries. The proposal directly aligns with these principles by creating employment and other benefits for the island, including increasing the island's population. The plan also identifies the need for careful management of the island's natural resources to support the island's environmental systems as well as its economic growth.

Relevant policies of the Planning and Design Code seek to preserve the natural features and scenic value of the coast and aims to ensure that development does not harm the coastal environment. The assessment recognises that the proposal will have some impact on the coastal environment and visual impact, however the area is already subject to a commercial operation, is not a known area of significant or high value biodiversity, is not a location of significant landscape or amenity value, or an area frequented by tourists.

The assessment concludes that the social, environmental and economic impacts of the proposal have been appropriately considered and impacts can be successfully managed through a range of mitigation and management strategies and plans prepared and implemented in consultation with the appropriate state and Commonwealth agencies, along with the required EPA licence. Full implementation of these plans, including monitoring and review, will be required to ensure impacts are appropriately managed. To ensure compliance with the conditions and the suite of management and monitoring plans that will be required as conditions of any approval, it is recommended that a cross-agency governance group be established, including the Commonwealth Department of Agriculture, Water and the Environment and the Kangaroo Island Council where relevant, to ensure effective and responsive monitoring is being adhered to by the proponent.

In addition to the available actions under the *Environment Protection Act 1993* to enforce licence requirements, section 115(11) of the *Planning, Development and Infrastructure Act 2016*, makes it an offence to undertake development contrary to a development authorisation.

On balance, the AR concludes that the proposal can be supported subject to additional requirements (including reserved matters for further assessment) and conditions as set out in the next section. Consistent with other Major Developments, it is recommended that the approval provide for a substantial commencement timeframe of 2 years and a maximum 5-year period for material completion of the development.

11 Recommendations

Should the Minister decide to grant provisional development authorisation for the major development, it is recommended that it is subject to the following conditions:

PART A: Conditions

1. Except where minor amendments may be required by other legislation or by conditions imposed herein, the construction, operation, use and maintenance of the major development shall be undertaken in accordance with:

   (a) Smith Bay Wharf Draft Environmental Impact Statement (including all appendices) (the EIS), prepared for Kangaroo Island Plantation Timbers by Environmental Projects, dated January 2019.

   (b) Addendum to the EIS, prepared for Kangaroo Island Plantation Timbers by Environmental Projects, dated October 2019.

   (c) Response Document, prepared by Kangaroo Island Plantation Timbers by Environmental Projects, dated March 2020 (including all commitments outlined in Table 8-1 of the Response Document).

   (d) (Without limiting the foregoing) the commitments as identified in Chapter 27 of the EIS and Chapter 7 of the Addendum to the EIS.

   (e) Second Addendum to the EIS, prepared for Kangaroo Island Plantation Timbers by Environmental Projects, dated December 2020

   (f) Second Response Document for the Second Addendum to the EIS, prepared by Kangaroo Island Plantation Timbers, dated 12 March 2021.

   To the extent of any inconsistency, a later document will prevail over an earlier one.

2. The proponent shall have substantially completed the development within 5 years of the date of this authorisation, failing which an extension of time may be sought from the Minister or the authorisation may be cancelled.

3. Except where minor amendments may be required by other legislation or by other conditions imposed below, all buildings, structures and infrastructure comprised in or required for the purposes of the major development shall be constructed, used, operated and maintained in accordance with the approved final plans, drawings, designs and specifications provided in accordance with conditions [13-15].

4. Should the development cease during the period between the commencement of earthworks and final completion, the proponent shall undertake all necessary steps to reinstate the land or seabed and make good any damage or disturbance.

5. The proponent shall submit further information and application(s) in relation to the matters that have been reserved.

6. No building works on any part of the site of the major development (the site) may commence until a favourable decision has been notified to the proponent by the Minister or the Minister's delegate in respect of the reserved matters and until a development authorisation under section 48(2) of the Development Act or section 115(2) of the *Planning, Development and Infrastructure Act 2017* is granted.

7. Before construction of the major development commences, the proponent must submit to the Minister for Planning and Local Government a Southern Right Whale Management and Monitoring Plan, prepared in consultation with, and to the satisfaction of the

Commonwealth Department of Agriculture, Water and the Environment. The Plan should outline appropriate methodology to monitor both whale habitat use and behaviour using appropriate survey techniques during construction, operation and decommissioning of the Port (refer to Advisory Notes below) and identify measures to avoid and/or mitigate any impacts arising from project activities on the species.

The Southern Right Whale Management and Monitoring Plan should include fuel, oil and chemical spill contingency measures to address any potential impacts on whales.

The Southern Right Whale Management and Monitoring Plan shall:

(a) be developed in accordance with the Commonwealth Department's Environmental Management Plan Guidelines;

(b) include a summary table of commitments required to achieve the objectives of the plan, and a direction to where each commitment is discussed in detail in the plan; and

(c) include reporting and review mechanisms, and documentation standards to demonstrate compliance with the requirement of the plan.

8. The reporting required by the Southern Right Whale Management and Monitoring Plan shall be made publicly available.

9. Before construction of the major development commences, the proponent must submit to the Minister for Planning and Local Government a Kangaroo Island Echidna Management, Monitoring and Offset Plan, prepared in consultation with and to the satisfaction of the Commonwealth Department of Agriculture, Water and the Environment. The Plan should outline appropriate methodology to monitor impacts to the Kangaroo Island Echidna during construction, operation and decommissioning of the project (refer to Advisory Notes below) and identify measures to avoid and/or mitigate any impacts arising from project activities on the species. The Plan must include the details of an offset proposal to address the residual significant impacts associated with the development.

    1. The Kangaroo Island Echidna Management, Monitoring and Offset Plan shall include an Offset Strategy, to the satisfaction of the Commonwealth Department of Agriculture, Water and the Environment.

    2. The Kangaroo Island Echidna Management, Monitoring and Offset Plan shall include a Vehicle Strike Monitoring Strategy, to the satisfaction of the Commonwealth Department of Agriculture, Water and the Environment.

    3. The Kangaroo Island Echidna Management, Monitoring and Offset Plan shall:

(a) be developed in accordance with the Commonwealth Department's Environmental Management Plan Guidelines;

(b) include a summary table of commitments required to achieve the objectives of the plan, and a direction to where each commitment is discussed in detail in the plan; and

(c) include reporting and review mechanisms, and documentation standards to demonstrate compliance with the requirement of the plan.

10. The reporting required by the Kangaroo Island Echidna Management, Monitoring and Offset Plan shall be made publicly available.

11. The construction of the major development shall be undertaken in accordance with:

    (a) the approved Works Programme;

    (b) the approved Construction Environment Management Plan (CEMP);

(c) the Southern Right Whale Management and Monitoring Plan;

(d) the Kangaroo Island Echidna Management, Monitoring and Offset Plan;

(e) the approved Marine Traffic Management Plan;

(f) the approved Fauna Management and Monitoring Plan;

(g) the approved Flora Management Plan;

(h) the approved Fire Safety and Hazard Management Plan;

(i) the approved Waste Minimisation and Management Plan;

(j) the approved Stormwater Management Plan;

(k) the approved Cultural Heritage Management Plan;

(l) the approved Heritage Management Plan;

(m) the approved Air Quality and Dust Management Plan;

(n) the approved Noise and Vibration Management Plan;

(o) the approved Biosecurity Management Plan; and

(p) the approved Marine Pest Management Plan.

12. In relation to each discrete stage of the development identified in the approved Works Programme, the proponent must, before commencing construction of any part of that stage, submit to the Minister, for approval, final detailed designs for all structures on the site, or within the marine environment, included in the stage (if any), including site plans, floor plans, elevations, cross-sections, details of any cut and fill, finishes and colours, onsite landscaping and other relevant specifications.

13. In relation to each discrete stage of the development identified in the approved Works Programme, the proponent must, before commencing construction of any part of that stage, submit to the Minister, for approval, final detailed plans and designs for all infrastructure (including for firefighting purposes), roads and car parking included in the stage (if any). Roads and car parking must be designed in accordance with relevant Australian standards. Infrastructure should be located on cleared land to minimise vegetation clearance as far as practicable.

14. In relation to each discrete stage of the development identified in the approved Works Programme, the proponent must, before commencing construction of any part of that stage:

    (a) submit to the Minister, for approval, detailed engineering designs for all structures sought to be constructed on or over land owned by the Crown (including a jetty and associated structures) included in the stage (if any), prepared and independently certified by a registered engineer, to the reasonable satisfaction of the Department for Infrastructure and Transport; and

    (b) submit to the Department for Infrastructure and Transport a certificate as to the structural soundness of each proposed structure.

15. In relation to each discrete stage of the development identified in the approved Works Programme, the proponent must, before commencing construction of any part of that stage, provide the Minister (to the Minister's satisfaction) with a copy of all relevant certification documentation following the assessment, and certification as complying with the provisions of the Building Rules, by a private certifier, the Kangaroo Island Council or by a person

determined by the Minister for Planning and Local Government, of all building work included in the stage (if any), in accordance with the provisions of the *Development Act 1993*/ (now the *Planning, Development and Infrastructure Act 2017)*. For the purposes of this condition 'building work' does not include plant and equipment or temporary buildings that are not permanently attached to the land (refer to Advisory Notes below).

16. The CEMP shall be monitored by the proponent to ensure implementation of the mitigation measures for the predicted impacts and shall be reviewed every 6 months by the proponent to ensure mitigation measures are effective. Each review shall be made publicly available and a copy provided to the Minister for Planning and Local Government until the construction phase is complete.

17. At all times during the operation of the major development the proponent shall implement a Traffic Incident Register that records all incidents and near misses associated with timber transport activities, how such incidents were responded to and timing of response. The Register must be made publicly available for the life of the project. An annual report shall be provided to the Minister for Planning and Local Government for each of the first 3 years of operation.

18. An Operational Environmental Management Plan (OEMP) shall be submitted for assessment and approval by the Minister for Planning and Local Government before operation of the major development commences. The OEMP shall be prepared in consultation with the Department of Environment and Water; the Department of Primary Industries and Regions South Australia; the Country Fire Service; the Kangaroo Island Landscape Board and the Kangaroo Island Council. The OEMP must identify measures to manage and monitor (at a minimum) the following matters:

    (a) traffic management and road maintenance;
    (b) light spill management;
    (c) groundwater management;
    (d) wastewater collection and treatment to comply with the SA Health On-site Wastewater Systems Code (April 2013);
    (e) emergency and evacuation procedures;
    (f) Aboriginal heritage requirements in accordance with the Aboriginal Heritage Act 1988;
    (g) safe shipping activities and navigation;
    (h) impacts on the terrestrial, coastal and marine environment, including coastal hazards, pest plants and animal species, native fauna, sea grass and marine fauna;
    (i) climate change impacts;
    (j) coastal management;
    (k) Southern right whale and other marine fauna, including monitoring of whale strike;
    (l) impacts on terrestrial mammals, in particular the Kangaroo Island echidna, including monitoring of echidna strike;
    (m) visual impacts;
    (n) revegetation and landscaping;
    (o) ongoing sustainability initiatives;
    (p) public safety;
    (q) impacts on adjacent land users; and
    (r) public and agency communication, including a community complaints strategy regarding the above matters by way of a community complaints register and management procedure. The complaints strategy and register must be made publically available for the life of the project.

The OEMP shall include reference to the Southern Right Whale Management and Monitoring Plan, Kangaroo Island Echidna Management, Monitoring and Offset Plan, Marine Traffic Management Plan, Fauna Management and Monitoring Plan, Flora Management Plan, Fire Safety and Hazard Management Plan, Waste Minimisation and Management Plan, Landscaping Plan, Stormwater Management Plan, Air Quality and Dust Management Plan, Noise and Vibration Management Plan, Road and Traffic Management Plan(s), Biosecurity Management Plan and Marine Pest Management Plan.

19. The OEMP must take into consideration, and have explicit reference to:

    (a) Addressing the impacts on the Kangaroo Island echidna through the implementation of a Kangaroo Island Echidna Management, Monitoring and Offset Plan, prepared in consultation with the Australian Government Department of Agriculture, Water and the Environment.

20. The OEMP shall be monitored by the proponent to ensure compliance with mitigation measures for the predicted impacts and shall be reviewed at regular intervals (being at least every 6 months for the first 2 years of operation), and updated as necessary, in particular when a significant change in project scope and/or performance is detected. Each review, and any updates, must be made publicly available for the life of the project.

21. Vegetation screening and landscaping shall be planted and established at the site prior to operation of the major development commencing, and when established must be maintained in good health and condition at all times.

22. All external lighting, including for car parking areas and buildings at the site shall be designed and constructed to conform with Australian Standards and shall be located, directed and shielded, and of such limited intensity, as far as reasonably practicable, that no unreasonable nuisance is caused to any person beyond the boundary of the site.

23. Council, utility or state agency maintained infrastructure that is demolished, altered, removed or damaged during the construction of the major development shall be reinstated to Council, utility or state agency specifications as applicable. All costs associated with these works shall be met by the proponent.

24. All vehicle car parks, driveways and vehicle entry and manoeuvring areas at or providing access to and from the site shall be designed and constructed in accordance with the relevant Australian Standards and appropriately line marked, and shall be constructed, drained and paved with bitumen, concrete or paving bricks (or other such material as agreed to by the Minister for Planning and Local Government), in accordance with sound engineering practice.

25. All loading and unloading, parking and manoeuvring areas at or providing access to and from the site shall be designed and constructed to ensure that all vehicles can safely traffic the site and enter and exit the subject land in a forward direction.

26. All stormwater design and construction at the site shall be in accordance with Australian Standards and recognised engineering best practice to ensure that stormwater does not adversely affect any adjoining property, public road or the marine environment.

27. During construction and operation of the major development, all liquids or chemical substances that have the ability to cause environmental harm must be stored within a bunded compound that has a capacity of at least 120% of the volume of the largest container, in accordance with the EPA 'Bunding and Spill Management Guidelines' (2016).

28. The proponent shall provide satisfactory oil spill and firefighting facilities and ensure that contingencies are in place prior to operation of the major development, having regard to the

South Australian Marine Spill Contingency Action Plan and the *Pollution of Waters by Oil and Noxious Substances Act 1987*.

29. The Kangaroo Island Council and Yumbah Aquaculture shall be given seven (7) days written notice by the proponent prior to the commencement of works associated with construction and all shipping movements associated with the operation of the development (including the provision of contact details for the person responsible for coordinating the works and the ongoing operation of the development). These notices are to be made publicly available

30. The operation of the major development shall be undertaken in accordance with:
    (a) the approved OEMP;
    (b) the Southern Right Whale Management and Monitoring Plan;
    (c) the Kangaroo Island Echidna Management, Monitoring and Offset Plan;
    (d) the approved Marine Traffic Management Plan;
    (e) the approved Fauna Management and Monitoring Plan;
    (f) the approved Flora Management Plan;
    (g) the approved Fire Safety and Hazard Management Plan;
    (h) the approved Waste Minimisation and Management Plan;
    (i) the approved Landscaping Plan;
    (j) the approved Stormwater Management Plan;
    (k) the approved Air Quality and Dust Management Plan;
    (l) the approved Noise and Vibration Management Plan;
    (m) the approved Road and Traffic Management Plan(s);
    (n) the approved Biosecurity Management Plan; and
    (o) the approved Marine Pest Management Plan.

31. The development and the site shall be maintained in a serviceable condition and operated in an orderly and tidy manner at all times.

32. Recycled water (wastewater, greywater and stormwater) must be stored separately from the main water supply storage.

33. All road infrastructure upgrades shall be completed to the satisfaction of the relevant road authority in accordance with the approved final details and specifications and the Road and Traffic Management Plans(s).

34. The capping and sealing of North Coast Road between Emu Bay Road and Freeoak Road, and the other upgrades to road infrastructure that have been identified by the Department for Infrastructure and Transport as being required for general access vehicles to safely use the proposed route, shall be completed before the delivery of timber to the port commences.

35. Any damage to Commissioner of Highways or Kangaroo Island Council transport assets caused by the development shall be repaired to the satisfaction of the relevant authority at the proponents cost.

36. A Decommissioning and Rehabilitation Plan, prepared in consultation with the relevant Government agencies and the Kangaroo Island Council, shall be submitted to the reasonable satisfaction of the Minister for Planning and Local Government. The Plan should be prepared at, or before, the 20 year anniversary of the commencement of operation of the development or 9 months prior to the time that operation is scheduled to cease, and include information related to:

    (a) identifying assets to be rehabilitated, remediated, decommissioned and/or removed, along with those that are proposed to be retained and the proposed tenure and management arrangements;

(b) confirming responsibility for costs associated with rehabilitation, remediating, decommissioning and/or removing and retaining assets;
(c) handover arrangements for useable assets;
(d) responsibility for future management and maintenance of useable assets; and
(e) measures, if required, to remove fuel and chemical storage and wastewater treatment facilities in accordance with relevant legislation and standards.

37. Decommissioning of the development and rehabilitation of the site [and the seabed] after the cessation of operation of the development shall be undertaken in accordance with the approved Decommissioning and Rehabilitation Plan, the Southern Right Whale Management and Monitoring Plan and the Kangaroo Island Echidna Management, Monitoring and Offset Plan.

38. Should operations at the site be temporarily suspended due to unforeseen circumstances, an Interim Care and Maintenance Plan shall be developed and relevant government agencies notified of the nature of the suspension and measures in place to limit impact of the unplanned closure. Should the temporary suspension extend beyond two years, a full Decommissioning and Rehabilitation Plan shall be prepared.

39. Unless otherwise specifically provided for in these conditions or otherwise agreed to in writing with the Minister for Planning and Local Government, all costs necessary for compliance with these conditions shall be met solely by the proponent.

PART B: MATTERS RESERVED FOR FURTHER ASSESSMENT

Should the Minister decide to grant provisional development authorisation for the major development, it is recommended that a decision is reserved on the following matters:

40. A Works Programme, identifying how the proponent proposes to stage the construction of the development.

41. A Construction Environmental Management Plan (CEMP), prepared in consultation with the Environment Protection Authority; the Department of Environment and Water; the Department of Primary Industries and Regions South Australia; the Country Fire Service; the Kangaroo Island Landscape Board and the Kangaroo Island Council. The CEMP must identify measures to manage and monitor (at a minimum) the following matters:

(a) traffic impacts, management and road maintenance for the duration of any site works and construction activities;
(b) construction and works noise and vibration management, to ensure compliance with the General Environmental Duty under the Environment Protection Act, 1993;
(c) management of air quality, in particular dust, to appropriately manage dust on the receiving environment;
(d) sequencing of development (including construction timelines for works on site, as well as periods and hours of construction);
(e) occupational health and safety matters;
(f) fire risk and emergency management;
(g) pest plants, animals and pathogens, including biosecurity risks
(h) impacts on the marine environment (especially noise and turbidity);
(i) visual impacts (including lighting);
(j) impacts on existing infrastructure adjacent to the subject land and marine environment;
(k) soils (including fill importation), stockpile management and prevention of soil contamination;
(l) contamination management;
(m) stormwater management;

(n) surface water and groundwater (including prevention of groundwater contamination);
(o) site contamination and remediation (where required);
(p) coastal erosion and remediation (where required);
(q) native flora;
(r) native fauna;
(s) waste management for all waste streams and overall site clean-up;
(t) use and storage of chemicals, oil, construction-related hazardous substances and other materials that have the potential to contaminate the environment (including proposed emergency responses);
(u) site security, fencing, safety (including the management of public access);
(v) Aboriginal Heritage sites to ensure compliance with the *Aboriginal Heritage Act 1988;*
(w) vegetation clearance (including Significant Environmental Benefit offset);
(x) impacts on marine fauna, in particular the Southern Right Whale;
(y) impacts on terrestrial mammals, in particular the Kangaroo Island Echidna; and
(z) public and agency communication, including a community complaints strategy regarding the above matters by way of a community complaints register and management procedure. The complaints strategy and register must be made publically available for the life of the project.

The CEMP shall be prepared taking into consideration, and with explicit reference to, relevant *Environment Protection Act 1993* policies and guidance documents, including but not limited to:

- the Environment Protection (Air Quality) Policy 2016
- the Environment Protection (Noise) Policy 2007
- the Environment Protection (Water Quality) Policy 2015
- the Environment Protection Authority Code of Practice for Materials Handling on Wharves 2007 (updated 2017)
- the Environment Protection (Waste to Resources) Policy 2010
- the Environment Protection Authority Bunding and Spill Management Guideline 2016
- Environment Protection Authority Handbooks for Pollution Avoidance
- the Environment Protection Authority Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry 1999
- the Environment Protection Authority Code of Practice for Vessel and Facility Management (marine and inland waters) 2008 (revised 2019)
- the Environment Protection Authority guideline 'Construction environmental management plan (CEMP) 2019'
- any other legislative requirements, Guidelines and Australian Standards requiring compliance

The CEMP shall include reference to the Southern Right Whale Management and Monitoring Plan, Kangaroo Island Echidna Management, Monitoring and Offset Plan, Marine Traffic Management Plan, Fauna Management and Monitoring Plan, Flora Management Plan, Fire Safety and Hazard Management Plan, Waste Minimisation and Management Plan, Stormwater Management Plan, Cultural Heritage Management Plan, Heritage Management Plan, Air Quality and Dust Management Plan, Noise and Vibration Management Plan, Biosecurity Management Plan and Marine Pest Management Plan.

42. A Marine Traffic Management Plan, prepared in consultation with the Department for Infrastructure and Transport.

43. A Fauna Management and Monitoring Plan, prepared in consultation with the Department for Environment and Water and the Kangaroo Island Landscape Board. The Plan should contain measures to monitor both timber transport vehicle and shipping vessel strike events and details of options to reduce the number of strike events. A record of vehicle and vessel strikes must be kept and made publicly available for the life of the project. The Plan should reference, or include, a Driver Code of Behaviour (prepared in consultation with the Department for Environment and Water, Kangaroo Island Landscape Board and the National Parks and Wildlife Service SA) that incorporates driver education on native fauna specific to the Island and vehicle strike risk.

44. A Flora Management Plan, prepared in consultation with the Department for Environment and Water and the Kangaroo Island Landscape Board.

45. A Fire Safety and Hazard Management Plan, prepared in consultation with the South Australian Country Fire Service.

46. A Waste Minimisation and Management Plan, prepared in consultation with the Environment Protection Authority and the Kangaroo Island Council to the extent relevant to their jurisdictions.

47. A Landscaping Plan detailing all proposed landscaping (including species, locations, numbers, mature height levels and an establishment and maintenance strategy), prepared in consultation with the Kangaroo Island Landscape Board.

48. A Stormwater Management Plan, incorporating a Soil Erosion and Drainage Management Plan, prepared in consultation with the Environment Protection Authority.

49. A Cultural Heritage Management Plan, prepared in consultation with the Traditional Owner groups and the relevant Aboriginal heritage representatives, to establish protocols for the discovery of any Aboriginal sites, objects and/or remains during construction. A copy of the Plan must be provided to the Department of the Premier and Cabinet (Aboriginal Affairs and Reconciliation).

50. A Heritage Management Plan, prepared in consultation with the Department for Environment and Water.

51. An Air Quality and Dust Management Plan, prepared in consultation with the Environment Protection Authority (and with input from a relevant marine biologist). The Plan shall include commitment to real-time visual monitoring of dust generated at the site and recording of dust deposition at the eastern boundary of the site (i.e. the boundary adjacent the aquaculture facility). The Plan must also include protocols for when works may need to cease or be modified.

52. A Noise and Vibration Management Plan, prepared in consultation with the Environment Protection Authority. The Plan must demonstrate compliance with requirements of section 25 (General Environmental Duty) of the *Environment Protection Act 1993*, and Clause 20(6) of the Environment Protection (Noise) Policy 2007. Physical measures to mitigate noise as identified in the Plan (including bunds/noise barriers along the southern and eastern boundaries) shall be implemented prior to operation of the facility.

53. A Road and Traffic Management Plan(s), prepared in consultation with, and to the satisfaction of, the relevant road authority (Kangaroo Island Council and/or the Department for Infrastructure and Transport) under the *Local Government Act 1999* and the *Highways Act 1926*. The Plan(s) shall include identification of:

    (a) all roads and intersections proposed for use to transport timber from the plantations to the site;

(b) the type of vehicles to be used, their distributions and frequency;

(c) safety impacts associated with the haulage operation;

(d) traffic management strategies including but not limited to:

i. measures to limit vehicle movements and transportation hours from sunrise to sunset, avoiding dawn and dusk [i.e. 30 minutes after sunrise and 30 minutes pre sunset];

ii. no vehicle movements between 12.00pm Saturday and the following Monday morning;

iii. speed limits along the length of the route (having regard to safety considerations, the impact on the road surface, the protection of native fauna and any other relevant matters);

(e) required road infrastructure upgrades (including the upgrades referred to in condition [34]).

The Plan shall contemplate the use of the route identified in Figure 53 of the Assessment Report for transporting timber from its source to the site except in circumstances where this is not reasonably practicable.

The Plan(s) should utilise a risk based approach to determining all road infrastructure upgrades.

The Department for Education (Transport Services Unit) must be consulted during the preparation of the Plan(s) to ensure school bus routes are taken into consideration.

54. A Road Infrastructure Agreement, outlining the financial arrangements associated with any required road infrastructure upgrades and ongoing maintenance arrangements, where relevant, entered into between the proponent and the relevant road authority (Kangaroo Island Council and/or the Department for Infrastructure and Transport) under the *Local Government Act 1999* and the *Highways Act 1926*.

55. A Biosecurity Management Plan, prepared in consultation with the Department of Primary Industries and Regions South Australia, the Department for Environment and Water, Kangaroo Island Landscape Board, National Parks and Wildlife Service SA and the Commonwealth Department of Agriculture, Water and the Environment. This plan shall be reviewed by an independent third party, at the proponents cost, to the satisfaction of the Department of Primary Industries and Regions South Australia.

56. A Marine Pest Management Plan prepared in consultation with the Department of Primary Industries and Regions South Australia and the Kangaroo Island Landscape Board. The Marine Pest Management Plan should contain measures to minimise the risk of aquatic pest and disease transfer from Port Adelaide, including but not limited to:

(a) No uptake or exchange of ballast water to occur within Port Adelaide (within Gulf St Vincent may be acceptable subject to definition or restrictions), for all vessels using or servicing the facility (including tugs);

(b) Developing biofouling management plans for each vessel or barge used (including tugs), both during construction and operation of the facility, in line with International Maritime Organisation (IMO) Guidelines and templates; and

(c) Ensuring all vessels used (including tugs), both during construction and operation of the facility, are appropriately cleaned (minimal biofouling on hull and niche areas and antifouling paints within manufactures application specifications) prior to arriving at Kangaroo Island (or South Australia if arriving from interstate).

4. This plan shall be reviewed by an independent third party, at the proponents cost, to the satisfaction of the Department of Primary Industries and Regions South Australia.

PART C: ADVISORY NOTES

1. The proponent is advised that all conditions must be met, including monitoring, mitigation and reporting requirements as detailed in relevant management plans. Failing to comply with a condition is considered a breach of the *Development Act 1993* (now the *Planning, Development and Infrastructure Act 2017)*, under which this authorisation is given, and the Minister may direct the proponent to make good any breach. The Minister may also take such action as is required because of any situation resulting from the breach, including the cessation of the operation of the development.
2. The Kangaroo Island Council or private certifier [accredited professional undertaking Building Rules assessments] must ensure that the assessment and certification are consistent with this provisional development authorisation (including any conditions or advisory notes that apply in relation to this provisional development authorisation).
3. Construction of each component of the development may commence only after a Building Rules assessment and certification has been undertaken in relation to that component and has been issued by the Kangaroo Island Council or accredited professional, and the Minister for Planning and Local Government has received a copy of the relevant certification documentation.
4. The following activities in relation to the components of the development hereby approved and/or requiring future approval will require licences under the *Environment Protection Act 1993*:
   (a) Bulk Shipping Facilities: the conduct of facilities for bulk handling of agricultural crop products, rock, ores, minerals, petroleum products or chemicals to or from any wharf or wharf side facility (including sea-port grain terminals), being facilities handling or capable of handling these materials into or from vessels at a rate exceeding 100 tonnes per day (triggers 7(1) of Schedule 1, *Environmental Protection Act 1993*).
5. Should any future capital dredging be required during the operational phase of the development, a licence will be required under the *Environment Protection Act 1993* and a separate development application under the *Planning, Development and Infrastructure Act 2016* may be required (subject to the volume proposed to be dredged).
6. Any future dredging is outside the scope of any approval that may be given by the Commonwealth Minister for the Environment in relation to EPBC no.2016/7814. Prior to any future works, including dredging, the proponent will need to consider their obligations under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (refer to Advisory Note 27).
7. The Commonwealth Department of Agriculture, Water and the Environment has advised that the Southern Right Whale Management and Monitoring Plan is likely to require the following:
   (a) a description of all threats to the Southern right whale arising from port construction, operation and decommissioning activities (including appropriate mapping);
   (b) a plan to monitor whale habitat use and behaviour, using appropriate survey techniques for mapping potential threats to whales arising from port construction and operation activities;

(c) mitigation measures to manage the impact of port construction and operation (including shipping), especially underwater noise caused by the port and vessels and the risk of vessel strike;

(d) a management framework to monitor vessel traffic with a commitment to undertaken compensatory actions in the case of a strike event;

(e) consideration and management of cumulative impacts arising from port construction and operation activities;

(f) management of noise impacts such that underwater noise does not exceed 183 dB re 1µPa2.s. The Plan should identify all sources of underwater noise that would be produced and measures to minimise these; and

(g) during construction, marine piling and blasting activities should minimise the risk of physical impacts, including temporary threshold shift to whales (i.e. reversible hearing loss). These must include:

Pre-start up visual observations

- visual observations of the observation zone (as defined in the Environmental Impact Statement)
- exclusion zones must be implemented so as to ensure that whales are not exposed to Sound Exposure Levels (SEL) of greater than or equal to 183dB re 1µPa2.s and be no less than a 1,250 metre horizontal radius for whales, unless a lesser exclusion zone has been determined from noise monitoring of piling or blasting and has a SEL equal to or below 183dB re 1µPa2.s
- if whales are sighted within the relevant exclusion zone, action to cease all piling/blasting within the relevant exclusion zone should be taken within two minutes of the sighting or as soon as possible if it is unsafe to cease piling/blasting within two minutes. If piling/blasting does not cease within two minutes the person undertaking the action must report the incident to the Commonwealth Minister for the Environment in writing within one business day
- piling/blasting activities must not re-commence until any whales that were observed in the exclusion zone are observed to move outside the exclusion zone or 30 minutes have passed since the last sighting
- soft start procedures: piling activities must be initiated at the soft start level and then build up to full operating impact force. The soft start procedures should only commence if no whales have been sighted in the exclusion zone during pre-start up visual observations
- no marine piling operations should occur between the hours of sunset and sunrise during peak southern migration of mother and calf whale pods (defined as April to November in any year)
- with the exception of the above, marine piling commenced prior to sunset or prior to a period of low visibility (i.e. inability to see for a distance of 500 metres or more due to fog, rain, sea spray or smoke) can continue between the hours of sunset and sunrise, unless marine pile driving is suspended for more than 15 minutes
- monitoring shall be undertaken by a suitably qualified Marine Fauna Observer who is trained in the identification of key marine species/fauna behaviour and communication procedures

- reporting within one business day to the Commonwealth Minister for the Environment when injury or mortality of a whale occurs.

8. The Commonwealth Department of Agriculture, Water and the Environment has advised that the Kangaroo Island Echidna Management, Monitoring and Offset Plan is likely to require the following:

   (a) a description of all threats to the Kangaroo Island echidna arising from the construction, operation and decommissioning activities (including appropriate mapping);

   (b) mitigation measures to manage the impacts of port construction and operation on the species, especially the risk of vehicle strike, this must include further information on limiting vehicle operations outside of high-risk periods (e.g. sunset and sunrise) or avoiding high-risk areas;

   (c) measures to monitor vehicle strike events, using appropriate survey techniques and training, to ground-truth the modelled estimates of vehicle strike rates on the species;

   (d) an adaptive management framework to identify, through the monitoring program, high-risk periods/areas and a commitment to modify operations to reduce the number of strike events;

   (e) detail of an offset proposal to address the residual significant impacts associated with vehicle strike induced mortality;

   (f) a plan to establish baseline data and population monitoring efforts to assess the effectiveness of mitigation and offset measures on preventing vehicle strike mortality and cat predation respectively; and

   (g) contingency measures should offset and mitigation measures be unsuccessful.

9. The Fauna Management and Monitoring Plan should refer to all fauna impacted by the proposal and specifically include reference to Rosenberg's goanna, Southern brown bandicoot, and cetaceans (noting the Kangaroo Island echidna and the Southern Right whale are subject to separate management plans required by the Commonwealth Department for Agriculture, Water and the Environment).

10. All works and activities will need to be undertaken in accordance with the General Environmental Duty as defined in Part 4, section 25(1) of the Environmental Protection Act 1993 (which requires that a person must not undertake any activity which pollutes, or may pollute the environment, without taking all reasonable and practical measures to prevent or minimise harm to the environment), relevant Environment Protection Policies made under Part 5 of the Environment Protection Act 1993, the Australian New Zealand Environment Conservation Council (ANZECC) Best Practice Guidelines for Waste Reception Facilities at Ports, Marinas and Boat Harbours in Australia and New Zealand and other relevant publications and guidelines.

11. Pursuant to the *Harbors and Navigations Act 1993*, the proponent will need to enter into a licence agreement with the Minister for Infrastructure and Transport over adjacent and subjacent land on terms acceptable to the Minister prior to the commencement of construction. Such agreement will require completion of the works to the satisfaction of the Minister, at which time the responsibility and control of the area will be transferred so as to minimise the Minister's ongoing responsibilities.

12. Prior to the use of the facility, pursuant to the *Harbors and Navigation Act 1993*, the proponent would need to apply to the Minister for Infrastructure and Transport to have the harbor defined (and gazetted) as a 'Port', and the proponent will be required to enter into a Port Operating Agreement with the Minister for Infrastructure and Transport. The Port may

be a compulsory pilotage area. Pilotage of loaded Cape sized vessels drafts greater than 16m on outward journey will be compulsory. Due to the intention of the Port to be available for use as a multi-user facility, it is likely that the proponent will be subject to the Maritime Services (access) Act 2000 allowing for third party access.

13. The proponent is advised that appropriate navigational aids will be required to be erected in appropriate locations, or existing navigation marks may need to be re-located, in consultation with the Department for Infrastructure and Transport, prior to commencement of operations at the new terminal (as required under the *Marine and Harbors Act 1993*).

14. The proponent is advised that the Commonwealth Navigation Act 2012 and Marine Orders Part 63 makes the provision of position reports mandatory for the following vessels:
    - foreign vessels from the arrival at its first port in Australia until its departure from its final port in Australia; and
    - all regulated Australian vessels while in a Modernised Australian Ship Tracking and Reporting System (MASTREP) area.

    Masters are strongly encouraged to report to MASTREP voluntarily even where it is not mandated.

15. Access and ongoing land tenure arrangements over the Crown land is to be negotiated and approved by the Minister for Environment and Water.

16. In accordance with the *National Heavy Vehicle Law (South Australia) Act 2013*, the proponent must apply to the National Heavy Vehicle regulator to obtain permits for use of Restricted Access Vehicles and/or High Productivity Vehicles on public roads, where access for such vehicle is currently not available. This might include such things as construction equipment and vehicles carrying large indivisible construction materials. This might also include access for vehicles such as Road Trains or Performance Based Standards (PBS) vehicles to transport commodities to and from the Port as part of regular operations.

17. Prior to the use of any High Productivity Vehicles, the Department for Infrastructure and Transport requires that any additional road infrastructure upgrades required to facilitate this use must be completed to the satisfaction of the relevant road authority.

18. An important initial step, as outlined in the Heavy Vehicle Access Framework, is to have an assessment of the route undertaken by an Authorised Route Assessor, at the proponent's cost. This process will identify any upgrades required to make the route safe and suitable for the type of vehicle access requested. As part of the approval/s, the proponent will be required to prepare a list of final transport infrastructure improvement needs upon completion of a full route assessment. If this is necessary, the list should identify the scope, timing and estimated cost of the required improvements.

19. The proponent is reminded of its obligation under the *Aboriginal Heritage Act 1988* whereby any "clearance" work, which may require permission to disturb, damage or destroy Aboriginal Sites, must be undertaken with the full authorisation of the Minister for Aboriginal Affairs and Reconciliation, according to section 23 of the Aboriginal Heritage Act 1988.

20. The proponent, and all agents, employees and contractors, such as construction crew, is reminded of the need to be conversant with the provisions of the *Aboriginal Heritage Act 1988*, particularly the requirement to immediately contact the Department of Aboriginal Affairs and Reconciliation in the event that archaeological items (especially skeletal material) are uncovered during earthmoving.

21. The proponent is reminded of its obligation under the *Native Title Act 1993* whereby the proponent would need to consult with appropriate representatives of any relevant

Aboriginal Groups in regard to any known sites of significance in the area and any Native Title Claims over the sea bed and subjacent lands.

22. The proponent is reminded of its obligations under the *Native Vegetation Act 1991* and the *Native Vegetation Regulations 2017* whereby any native vegetation clearance must be undertaken in accordance with a management plan that has been approved by the Native Vegetation Council that results in a significant environmental benefit on the property where the development is being undertaken, or a payment is made into the Native Vegetation Fund of an amount considered by the Native Vegetation Council to be sufficient to achieve a significant environmental benefit in the manner contemplated by section 21(6) of the *Native Vegetation Act 1991*, prior to any clearance occurring.

23. The proponent is reminded that, under the *National Parks and Wildlife Act 1972*, permits are required for the 'taking of protected animals', such for the capture and relocation of animals during construction and the destruction or relocation of animals during operation.

24. The proponent is reminded of its obligations under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*, not to undertake any activity that could have a significant effect on any matter of National Environmental Significance without the approval of the Commonwealth Minister for Environment.

25. Prior to any foreign vessels being allowed into the port, the proponent will need to consult with the Department for Infrastructure and Transport (Marine Operations) to address any requirements of the Australian Quarantine Inspection Service (AQIS) and Australian Customs Service.

26. The wastewater treatment system shall be designed by the proponent to ensure that the general obligations of the Environment Protection (Water Quality) Policy 2015 and the SA Health On-site Wastewater Systems Code (April 2013) are met, and to ensure that effluent does not overflow or escape from drains, pipes, sumps, tanks, storage/treatment basins into any watercourse, or into stormwater drains which do not drain into the effluent collections, treatment and disposal system, except where the effluent complies with criteria in the above Policy.

27. Should the proponent wish to vary the Major Development or any of the components of the Major Development, an application to the Minister for Planning and Local Government must be submitted, provided that the development application variation remains within the ambit of the Environmental Impact Statement (and the Addendum to the Environmental Impact Statement) and Assessment Report referred to in this development authorisation. If an application variation involves substantial changes to the proposal, pursuant to section 47 of the *Development Act 1993*, the proponent may be required to prepare an amended Environmental Impact Statement for public inspection and purchase. An amended Assessment Report may also be required to assess any new issues not covered by the original Assessment Report and the decision made pursuant to section 48 of the *Development Act 1993*.

28. The Minister has a specific power to require testing, monitoring and auditing under section 48C of the *Development Act 1993*.

Appendix 1

12 Consultation on the EIS

The public notification period on the EIS was from 28 March 2019 until 28 May 2019.

Three public information session were held during this period:

- 1 May 2019, 1.00-7.00pm, Kingscote
- 2 May 2019, 11.00am- 4.00pm, Parndana
- 7 May 2019, 12 noon-6.00 pm, Adelaide

Staff from the former Department of Planning, Transport and Infrastructure, the proponent and Environmental Projects (the consultant engaged by KIPT to prepare the EIS) were present at each session as well as specialist contractors appointed by KIPT who contributed to the technical studies and modelling related to abalone research and marine ecology that informed the EIS. The sessions were attended by approximately 50 people with the majority attending the Kingscote session.

The availability of the EIS was advertised in *The Islander* and *The Advertiser* newspapers. The documents were made available at the front counters of the Kangaroo Island Council, the Office of the Commissioner for Kangaroo Island, and the former Department of Planning, Transport and Infrastructure, as well as online at www.sa.gov.au/majordevelopments and www.saplanningportal.sa.gov.au.[264]

During this period, 1374 submissions were received from the public.

Post-consultation, the proposal was redesigned to remove the solid causeway and requirement for dredging (discussed in detail at Section 13**Error! Reference source not found.**). This section contains a summary of comments on the EIS. Comments on the redesigned proposal are summarised at Section 13**Error! Reference source not found.**.

12.1 Community /public submissions

Given the close proximity of the proposal to, and the potential impacts that may result from the proposal on Yumbah Aquaculture, Yumbah is considered a key stakeholder and as such a summary of Yumbah's submissions has been separated from general community/public submissions (see 5.2). A summary of the proposal's potential impacts specific to Yumbah is included in the AR at Section 5.5.1.

The large majority of public submissions and comments did not support the proposed jetty nor the proposed route to the facility. The main issues/comments raised were:

- Potential impacts on the environmental values of Smith Bay, in particular the marine environment (including seagrass loss during dredging)
- Potential impacts of shipping movements on marine species, in particular Southern right whales and dolphins
- Potential biosecurity impacts of international ships entering the waters of Kangaroo Island
- Potential traffic impacts, including the number and type of vehicles on the road, and the safety of wildlife (in particular Kangaroo Island echidnas and Rosenberg's goanna)

[264] Note – from 31 July 2020 all documents are contained on www.plan.sa.gov.au

- Potential traffic impacts – the ability of the roads to support the heavy vehicle traffic (volume and type of vehicle) that would be required to transport timber from the plantations to the port
- Lack of funding arrangement information or commitment from KIPT to fund required road upgrades and maintenance which implies the burden will be borne by Council (and therefore local rate payers) or the State Government
- Potential impacts on the adjacent aquaculture business (Yumbah) – possible job loss (due to closure of business); changed ecology of Smith Bay (water temperature and water movement); fine sediments from dredging and ship movements; dust, noise and light impacts; and loss of Yumbah's 'clean and green' image
- Potential impacts on the koala population living in the plantations, including concern the koalas will relocate to national parks upon felling and the impacts this may have on native vegetation
- Long-term viability of the timber industry on Kangaroo Island
- Potential impacts of the increase in population on the already low supply of housing and public infrastructure
- Potential impact on an area of scenic beauty
- Potential impact on the 'clean and green' image of Kangaroo Island
- Potential impacts on the overall general peaceful way of life (which people have chosen to live there for)
- Potential community facility benefits of an increased population (including schools, CFS, sporting clubs and other volunteer services)
- Potential economic benefits, especially job creation and investment
- Ability to export existing planted timber from the island and enable second rotation plantings, or return land to agriculture for privately owned plantations.

Of the 1374 public responses received, 1265 opposed/raised concerns with the proposal and 109 responses supported/partially supported the proposal.

12.2 Yumbah Aquaculture (Yumbah) submission

Yumbah is the largest abalone farming enterprise in the southern hemisphere with aquaculture farms and processing facilities around the country, particularly in Tasmania, Victoria and South Australia. The company has been operating at Smith Bay, Kangaroo Island since 1995 where they breed and process abalone. It is licensed to breed 30 marine species at this facility. Yumbah employs 25FTE (direct) on Kangaroo Island and is supported by a processing plant at Wingfield where grading and packaging is centrally managed.

Yumbah's Kangaroo Island facility is located immediately adjacent (east) of the proposed development and its intake pipes are located within 400m of the proposed wharf.

Figure 58: Land owned and operated by Yumbah Aquaculture (PLB Pro)

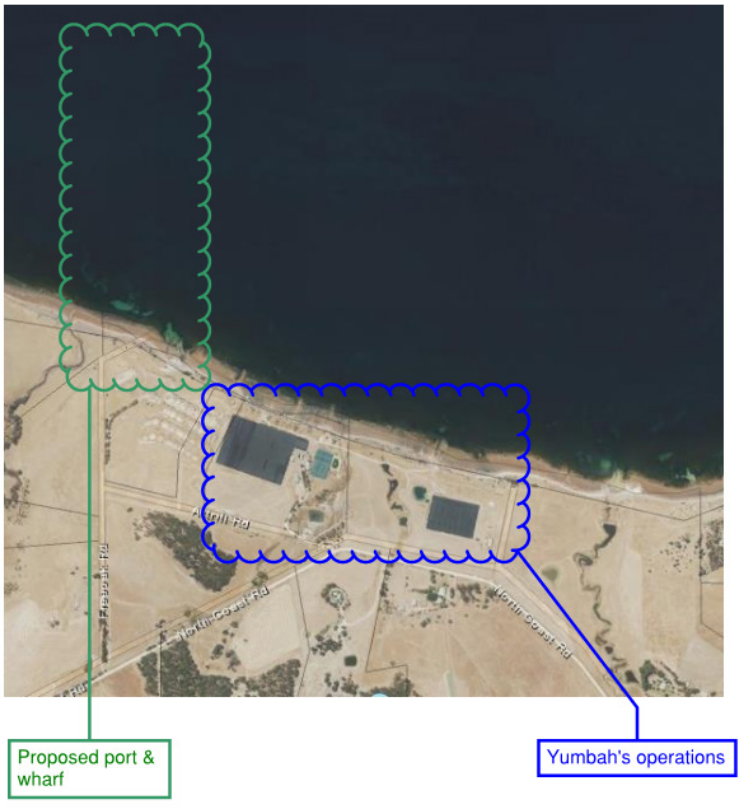


Figure 59: Proximity of the proposal to Yumbah

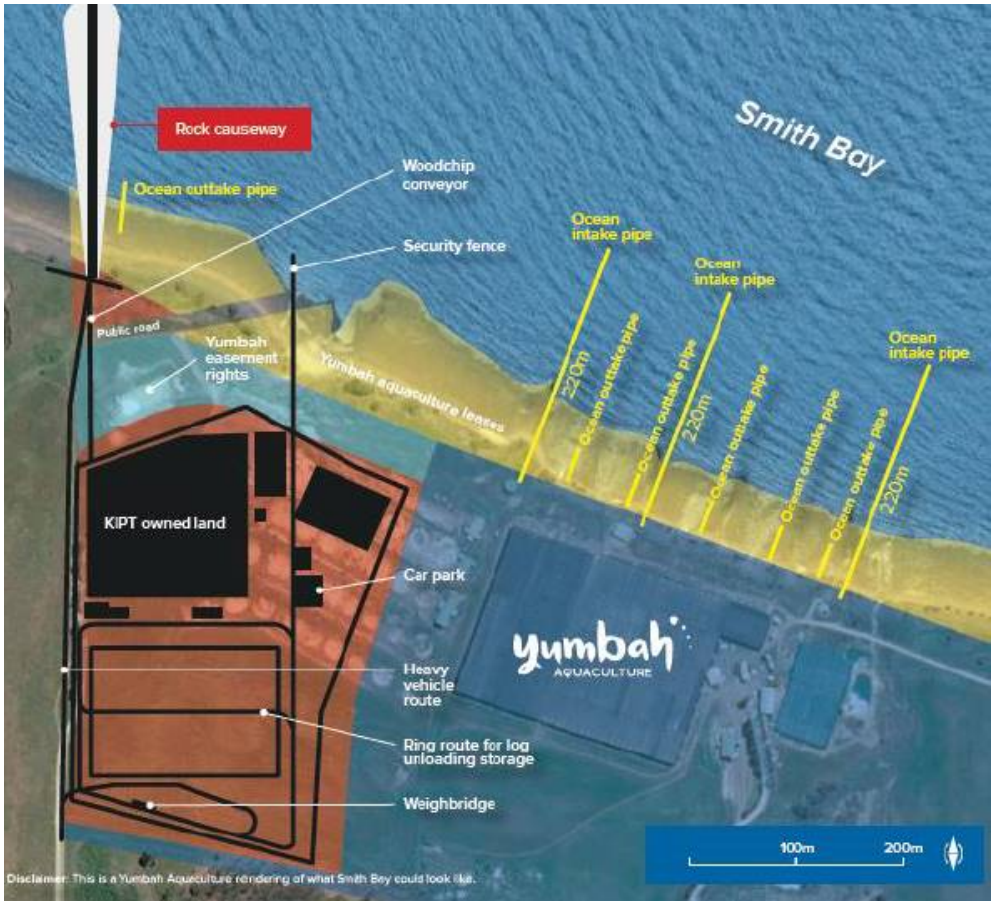


Figure 60: Location of Yumbah's intake pipes
(Smith Bay Wharf Draft Environmental Impact Statement Response by Yumbah Aquaculture, page 86)

Yumbah's detailed submission raised multiple concerns, notably the range of potential marine impacts (i.e. changed hydrodynamic conditions, biosecurity, dust and light) that the proposal may have on the operation and ongoing viability of their facility.

The company acknowledged that there is need for improved freight options for Kangaroo Island, however expressed serious concerns around the potential impacts of the proposal on their operations. Yumbah also questioned the results and validity of modelling within the EIS and outlined what it saw as inaccuracies and misinformation that informed the EIS.

Yumbah stated that it does not believe that the proposal can co-exist with the existing aquaculture operation.

Key issues raised in their submission include, but are not limited to, the:

- EIS underplaying the impacts on their facility and inaccurately describing their operations
- The direct negative impact on Yumbah's operations during the port's construction, in particular dredging, and operation
- The EIS's lack of consideration of the cumulative impacts on Yumbah's operations
- The EIS's incorrect, inaccurate and/or outdated information in relation to abalone husbandry
- The fact that EIS did not determine the exact composition of the seabed planned for dredging, which compromises the data presented in the EIS

- The lack of accuracy in the sediment sampling depths as they did not extend to the proposed depth of dredging, which compromises the data presented in the EIS
- The changed hydrodynamic conditions at Smith Bay (changes to oceanic currents, reduced circulation of nearshore water, elevated water temperatures and increased algal blooms) caused by the proposed solid causeway which will impact on Yumbah's operations
- The lack of consideration of the re-suspension of sediment during construction of the proposed causeway
- The inadequacy of the ecotoxicology testing was as it was performed on wild abalone for 24 hours only with no ongoing monitoring data or consideration of cumulative impacts
- The incorrect comparison of wild abalone to farmed abalone
- The lack of consideration of the impacts of dust and light on Yumbah's operations
- The incorrect comparison of Yumbah with a similar facility in Portland, Victoria as that facility is five nautical miles away from a port and the proposed port at Smith Bay is less than 400m away
- The lack of consideration by the EIS of the potential economic loss should Yumbah close as a result of the proposal and the resultant potential tourism loss for other businesses based in/around Smith Bay
- The lack of serious consideration of alternative sites which was done via the desktop only with no credible data presented and no socio-economic analysis undertaken
- That the proposed infrastructure is specific to the timber industry and is inappropriate for other uses and therefore cannot be used as a multi-user port facility as claimed
- The lack of information on who will pay for the necessary road upgrades and maintenance
- The impact of the proposed seaport on Yumbah's ability to undertake future expansions which have been placed on hold pending the outcome of this proposal.

12.3 Kangaroo Island Council

The Kangaroo Island Council provided a submission on the EIS advising that whilst the proposal does demonstrate some merits, overall it does not accord with provisions for new development within the Coastal Conservation Zone. The submission also expressed the views of the Elected Members of Council reflecting community sentiment which Council recommended should also be considered in the assessment of the proposal.

Council supports the harvesting and export of the island's timber resource however is of the view that Smith Bay is not the appropriate location for such a development.

The Council also considers that co-locating a port with an aquaculture operation is not feasible and will lead to ongoing conflict and continuing dispute for both companies.

Council raised the following key issues/ matters of concern:

- The proposal does not adequately address the requirement to consider alternative locations for the proposal as no feasibility study has been provided for any of the alternative locations identified in the EIS. Council recommended that the north-west coast (in particular west of Stokes Bay Road) warrants further investigation.

- The EIS does not quantify the economic impact of the proposal should it result in the closure of Yumbah's operations at Smith Bay. Council recommended that this should be considered and included in the assessment as, given the proximity of the proposal to Yumbah, closure is a real possibility.
- The concept of a 'multi-use' facility has resulted in a lack of flexibility in design and location option. Council recommended that other designs and locations which may not be for multi-use be considered.
- There is no information on, or identification of, other potential import or export uses of the facility.
- There is uncertainty about KIPT's ability to achieve all the commitments outlined in the EIS.
- Traffic impacts on the central Island area from heavy logging trucks operating on a proposed continuous basis (24/7) will impact on road infrastructure and impact users' safety.
- Costs to upgrade, construct (where necessary) and maintain roads and intersections would be incurred. Council does not have funding available and does not wish to impost ratepayers for the necessary upgrades to support the development.

12.4 Relevant government agencies

Below is a summary of issues and concerns raised by relevant state and Commonwealth Government Agencies on the EIS (Their comments on the redesign are at Section 1).

12.4.1 Department of Primary Industries and Regions, South Australia

Primary Industries and Regions SA (PIRSA) considers the proposal involves risk, in particular the introduction of pests and diseases, which is considered a significant issue that would need to be managed during both construction and ongoing operations.

Should the proposal be supported, PIRSA emphasised the importance of KIPT implementing and complying with the mitigation measures outlined in the EIS, in particular the Dredge Management Plan, Marine Pest Management Plan and Biosecurity Management Plan. PIRSA also noted that the EIS does not cover all species that Yumbah is licensed and recommended:

- The development of a Dredge Management Plan, Marine Pest Management Plan and Biosecurity Management Plan in consultation with, and to the reasonable satisfaction of, PIRSA
- That the Dredge Management Plan include use of a real-time monitoring system to inform adaptive management and cessation of dredging activity if the triggers identified in the EIS for suspended sediment loads are reached.

12.4.2 Environment Protection Authority

The Environment Protection Authority (EPA) raised multiple issues in relation to marine water quality, stormwater, groundwater, wastewater, air quality and noise, and the potential impacts on the neighbouring aquaculture operation. It also questioned the adequacy of modelling and investigations into the water quality impacts of dredging on benthic organisms (including seagrasses and reef habitat) and considered that the cumulative impacts associated with the proposal will result in significant risk, however they may be manageable.

The EPA requested further information and/or clarification on several matters including, but not limited to, the following:

- Factors that determine whether the dredge campaign will be 'expected case scenario' or 'worst case' be identified to enable proper assessment (noting that presentation of a single scenario is preferred)
- Details of the sediment composition at deeper depths and the impacts of this on the concentration and duration of predicted sediment plumes
- Details of the cumulative impacts on intertidal communities and coastal process
- Details of the cumulative impacts associated with increased turbidity (caused by dredging) and warm water temperatures (in spring and summer) on the abalone operation
- An assessment of the potential risks of impacts that pathogens may have on abalone resulting from increased levels of suspended solids caused during dredging and the berthing of ships
- Evidence that increased sediment loads will not impact filtration systems for the hatchery and nursery of the abalone operation
- Further investigations and more information on the noise impacts and proposed mitigation measures in relation to adjacent land uses, including Yumbah
- Investigation of design options for an open bypass (or gated culvert) in the near-shore section of the causeway and inclusion of hydrodynamic modelling to predict potential impacts on turbidity and temperature
- Additional assessment of the impacts of dredging on benthic communities, including seagrasses, and undertaking of a BACI (Before and After Control and Impact) habitat monitoring program that incorporates both seagrass and rocky reef habitats
- Details on measures to manage contamination that may result from placing potentially contaminated sediments (from dredging) on land
- Further information about managing dust on an ongoing basis
- Further information on use of marine fauna observers and piling methods
- Further information on the design and construction of the proposed retention basin in relation to the *EPA Guideline Wastewater Lagoon Construction* (April 2019).

12.4.3 Department for Environment and Water

The Department for Environment and Water (DEW) raised multiple issues in relation to the coastal and marine environment, coastal processes, coastal hazards, native vegetation, assessment of alternative structures, and the construction of the proposed causeway.

In relation to marine habitat loss, DEW advised that it did not accept the EIS statement that 'impacts will be low because there is similar habitat elsewhere'.

DEW requested further information and/or clarification on several matters including, but not limited to, the following:

- Identification of the indirect impact area for seagrass (what is clearance and what is temporary disturbance) to allow for calculation of the significant environmental benefit (SEB) required under the *Native Vegetation Act 1991*
- Further information on the calculation of habitat loss from proposed dredging and the inclusion of all native vegetation loss and evidence of how the figure was determined
- Further information and mapping of the intertidal ecology including its species, habitat value, and significance within the location

- Details of the cumulative impacts on intertidal communities
- Additional assessment and information of impacts from dredging on the benthic communities, including seagrasses and preparation of a BACI (Before and After Control and Impact) habitat monitoring program that incorporates both seagrass and rocky reef habitats
- Further information on sand and wrack management options and strategies
- Additional information regarding the impacts (including cumulative) on seagrasses in shallower waters adjacent the breakwater
- Additional details of the extent of assessment of alternative structures including assessment data and design analysis, cost/benefit analysis and assessment of wrack accumulation (and potential management options) for each alternative design
- Further information on the proposed causeway construction, in particular the management of fill (including strategies to avoid re-suspension into the water column during transportation to and from the causeway site) during a range of weather conditions.

DEW also advised that KIPT's proposed contribution to an existing seagrass monitoring project (undertaken by the Kangaroo Island Natural Resources Management Board) to offset native vegetation clearance is not suitable as a Significant Environmental Benefit under the *Native Vegetation Act 1991*.

5.4.4 Kangaroo Island Natural Resources Management Board

The Kangaroo Island Natural Resources Management Board (KI NRMB) [265] raised the following key issues in relation to the potential biosecurity risk associated with the proposal:

- The presence of Pacific Oyster Morbidity Syndrome (and potential other aquatic pests and diseases) within the proposed ballast water exchange within the 'same risk area' of Port Adelaide. The risk of transfer to Kangaroo Island is high and is not adequately acknowledged or addressed in the EIS
- The level of unknown risk associated with the short research timeframe used for the assessment and management actions identified in the EIS
- The lack of detail on potential impacts on Kangaroo Island threatened species (in particular the Rosenberg's goanna) and proposed management actions
- Potential impacts of the construction and operation on marine life, particularly hearing damage on whales and dolphins
- Impacts on the road network and maintenance costs, and the social and environmental impacts associated with the route.

Should the proposal be supported, KI NRMB recommended that:

- A Marine Pest Management Plan be prepared in consultation with the KI NRMB
- Additional requirements be included in the Operational Environmental Management Plan to prevent exchange of ballast water from any port known to be infested with marine pests or disease
- The Biosecurity Advisory Committee, a sub-committee of the KI NRMB, be used as a conduit for community feedback during the development of a Biosecurity Management Plan

[265] Now the Kangaroo Island Landscape Board (KILB)

- a Construction Environmental Management Plan and an Operational Environmental Management Plan be prepared in consultation with the KI NRMB.

12.4.5 Department of Planning, Transport and Infrastructure

The Department of Planning, Transport and Infrastructure (DPTI) [266] advised that the proposed facility does not directly abut any state-controlled roads, however access to the site will utilise the existing road network, including the Playford Highway, a portion of which (the section between Rowland Hill Highways at Parndana to Kingscote) is an arterial road under the care, control and management of the Commissioner of Highways. This section of Playford Highway is gazetted for PBS Level 1A vehicles (single articulated vehicle or truck trailer combination equal to or less than 20m in length) with the section of Playford Highway from the junction with Welsch Track, Parndana to Kingscote gazetted for 23.0m long B-Doubles.

A significant proportion of the proposed route will utilise local roads that are under the care, control and management of the Kangaroo Island Council. These roads are not gazetted for use by heavy vehicles.

DPTI supported the use of a defined route as opposed to the use of an 'open road' network, and supported (in principle) Option 1. This option consists of local roads which are not currently gazetted for heavy vehicles larger than general access heavy vehicles and do not include any DPTI arterial roads. If larger vehicles are proposed, road infrastructure improvements will be required.

Given the significant increase in traffic volumes that would be directly related to the development, and would be of direct benefit to KIPT, DPTI stipulated that in relation to its own road network assets, all arterial road improvements and ongoing maintenance required to facilitate the development would have to be fully funded by KIPT. This would best be accommodated through an appropriate Deed (funding agreement) with authorisation being executed with the relevant road authority.

Should the proposal be supported, DPTI recommended that:

- KIPT, in consultation with DPTI and the Kangaroo Island Council, identify the road improvements required to accommodate vehicles to be used for the development
- KIPT enter into a funding agreement with the relevant road authority, in particular with the State Government, regarding the delivery of any identified road improvements (for roads under the care of the Commissioner for Highways) with KIPT funding these improvements where required directly to accommodate vehicles to be used for its proposed development.

12.4.6 SA Housing Authority

The SA Housing Authority's (SAHA) view was that the development would likely result in additional housing demand during its construction and operational phases and that this will have an impact on the island's short-term and longer term housing supply. Should the proposal be supported, SAHA recommended that the proponent liaise with the Council and State Government regarding the anticipated population growth and accommodation needs that may arise.

12.4.7 Department for Education

The Department for Education operates 12 bus routes across Kangaroo Island which are included in the EIS, and recommended that, should the proposal be supported, KIPT liaise with the Department's

[266] Machinery of Government changes in July 2020 has seen the creation of the Department for Infrastructure and Transport (DIT) with the relocation of the Planning and Land Use Services (PLUS) Directorate to the Attorney-General's Department (AGD).

Transport Services Unit to discuss options for minimising the risk of school bus interaction with haulage trucks.

12.4.8 SA Country Fire Service

The South Australian Country Fire Service (SA CFS):

- Identified that due to the machinery operations, vehicle use, processes and timber storage the site, fire poses a significant risk, and with likely weather conditions may increase the spread of fire beyond the site
- Raised concerns in relation to escape routes, response plans and refuges from the site in the event of a large fire (both on site and in the vicinity)
- Requested additional information on passive and active fire suppression systems and measures and site plans identifying bushfire buffers on the site.

Should the proposal be supported, the SA CFS recommended that a Fire Safety and Hazard Management Plan be prepared in consultation with the Country Fire Service.

12.4.9 South Australian Tourism Commission

The South Australian Tourism Commission (SATC) acknowledged that the use of the proposed port by cruise ships is no longer within the scope of the development. The SATC supported the change in scope and reiterated that cruise ships, as originally proposed, were not an option that would be supported.

12.4.10 Department of the Premier and Cabinet – Aboriginal Affairs and Reconciliation

The Department of the Premier and Cabinet – Aboriginal Affairs and Reconciliation (DPC-AAR) acknowledged that the proponent engaged a heritage consultant to prepare a desktop heritage assessment and that the recommendations contained in this assessment are appropriate. However, DPC-AAR raised concern that the EIS did not commit to any of the recommendations identified in the Heritage Report nor did it undertake an Aboriginal heritage survey.

DPC-AAR also:

- Advised that the desktop heritage report did not acknowledge the Smith Bay Artefact Site (located east of the proposed development site) or Smith Creek, and the potential for sub-surface Aboriginal heritage discoveries
- Raised concern at the lack of demonstrated contact with the Ramindjeri Heritage Association who have an interest in Kangaroo Island
- Required that the proponent identify which of the heritage assessment recommendations (from the 2017 EBS Report) would be adopted and how these commitments would be implemented and monitored
- Recommended that KIPT commission an archaeological and anthropological heritage survey of the site with the Traditional Owners.

Should the proposal be supported, DPC-AAR recommended that KIPT develop, in consultation with the Traditional Owners and specialist heritage consultants, a Cultural Heritage Management Plan (including a heritage risk management strategy) prior to commencing any ground-disturbing works.

12.4.11 Commonwealth Department of Agriculture, Water and the Environment

The Commonwealth Department of Agriculture, Water and the Environment (DAWE) [267] raised issues in relation to potential impacts on Southern right whales, particularly during the calving period.
DAWE also requested further information and/or clarification on several matters including, but not limited to, the following:

- Information on the complexities of vessel strike and the consequence of such an event on the Southern right whale's recovery
- Details of the impacts from third party vessels using the wharf
- Detailed timing of road vehicle movements to avoid potential peak active times for Kangaroo Island echidnas
- Clarification of the vehicle type, number of vehicle movements and haulage speed limits (for assessment of echidna strike)
- Further information on the proposed Kangaroo Island echidna offset strategy
- Commitment to actions and strategies proposed in the EIS and Operational Environmental Management Plan to mitigate impacts on Matters of National Environmental Significance.

13 First (1st) Addendum to the EIS

Following the review of submissions received on the EIS, further consideration on the design and construction method of the 'in-water' component of the proposal (i.e. the wharf structure) was undertaken by KIPT and a redesign of the wharf facility was proposed. The purpose of the redesign was to reduce impacts to the marine environment caused by dredging during construction and the ongoing impact on the marine environment resulting from the solid causeway.

The following changes were made:

- replacing the 250m solid causeway with an open fully piled jetty structure with a floating pontoon at the end (as proposed in the original design)
- extending the jetty out to about the 14m depth contour (estimated at 640m from the coast, an additional 220-250m seaward).

The removal of the solid causeway also meant the removal of the need to dredge and build on-land dredge material settling ponds.

All other on-land components of the proposal remained the same.

The former Minister for Planning determined that the proposed changes significantly affected the substance of the EIS. Consequently, the former Minister amended the Major Development Declaration (gazetted on 3 October 2019) and directed that KIPT formally review the EIS and produce an Addendum Document to be made publicly available, pursuant to section 47 of the Act.

The State Planning Commission reviewed the Guidelines, following advice from state government agencies and DAWE and determined that the existing Guidelines were still relevant to the proposed changes and only refinements to reference these changes were required (updated Guidelines released October 2019).

[267] Formerly the Department for the Environment and Energy (DoEE)

13.1 Consultation on the First (1st) Addendum

The public notification period for the 1st Addendum was from 7 November 2019 to 20 December 2019. One public information session was held during on Friday 29 November 2019 from 10.00am to 4.00pm at Kingscote. The session was attended by approximately 10 people. Staff from the former DPTI, KIPT and their consultants (Environmental Projects) were present as well as specialist contractors appointed by KIPT who contributed to the technical studies and modelling that informed the Addendum.

The availability of the Addendum was advertised in *The Islander* and *The Advertiser* newspapers. The document was made available at the front counters of the Kangaroo Island Council, the Office of the Commissioner for Kangaroo Island, and the former Department of Planning, Transport and Infrastructure (DPTI) as well as online at www.sa.gov.au/majordevelopments and www.saplanningportal.sa.gov.au.[268]

During this period, the department received 100 submissions from the public. Of these, 47 provided comment on the Addendum/changes in design with the remaining 53 submissions providing overall comment on the proposal or issues that had been raised in the EIS.

Of the 47 submissions that provided comment on the Addendum/changes in design, 33 were supportive of the changes due to the reduced impacts on the marine environment and Yumbah Aquaculture's operations and 14 were opposed to the proposal as a whole and were of the view that the Addendum did not adequately resolve issues associated with the proposal.

13.1.1 Yumbah Aquaculture (Yumbah)

Yumbah Aquaculture (Yumbah) provided a detailed submission on the Addendum advising that the new design addressed some of the concerns previously raised but did not satisfy all of them. Yumbah identified that although the new design removed the risks associated with dredging and that this would reduce the impact on the local marine ecology, it did not address all of the operational risks associated with co-locating a seaport next door to an abalone facility. Yumbah advised that it did not believe that the movement further 250m offshore would be an effective buffer between the port operations and its operations.

Yumbah reiterated the concerns raised in its submission on the EIS, which are addressed by the proponent in its Response Document.

Concerns raised by Yumbah related to the Addendum included:

- the revised Marine Activity Zone overlaps with Yumbah's licensed operational area, which could restrict Yumbah's use of its designated land
- characterisation of the seabed along the piling alignment (needed to determine the duration of pile driving) has not been provided
- the exact number of piles has not been provided
- the increased pile driving will exacerbate noise impacts on Matters of National Environmental Significance (MNES) (Southern right whales) and a remodelled underwater noise impact assessment is needed
- extension of the jetty will impact migration patterns of the Southern right whales
- impacts of the changed design on sea dragons were not addressed

[268] Note – from 31 July 2020 all documents are contained on www.plan.sa.gov.au

- the revised design does not ameliorate biosecurity risk associate with ballast water discharge or biofouling
- visual amenity impacts will be increased
- impacts of the use of anti-corrosion marine paints and the potential risk to abalone were not addressed
- the impact of lights from the extended 650m facility on marine species, abalone and human amenity were not addressed.
-

Yumbah is also concerned about KIPT's 'ambition' to double the area of plantations on the island. This is outside the scope of this Major Development proposal and any future expansion would be subject to separate development application(s) and assessed against the policies in relation to forestry on the island at the time of application.

13.1.2 Kangaroo Island Council

The Kangaroo Island Council provided a submission on the Addendum that reiterated its support for the need for a port facility to move the forestry product from the island, however maintained concerns regarding road transport impacts, biosecurity and its overall objection to KIPT's chosen location of Smith Bay.

The Council maintained its view that a location west of Stokes Bay would be more appropriate for a deep water port facility, due to the depth of water enabling less extensive wharf infrastructure and the proximity to the plantations. Council requested that further consideration be given by the government to establish whether the boundaries of the Southern Spencer Gulf Marine Park could be adjusted to accommodate a port facility which would not be within the Marine Park boundaries, thus enabling the facility to be located west of the proposed site of Smith Bay.

13.1.3 Relevant Government Agencies

Below is a summary of comments made by relevant government agencies on the Addendum.

13.1.3.1 Department of Primary Industries and Regions, South Australia

Primary Industries and Regions SA (PIRSA) noted that the lengthening of the berth such that dredging would no longer be required has removed the risks directly related to dredging activities outlined in the original EIS.

PIRSA:

- advised that the risk of exotic marine pest establishment on the structure would be reduced with the new design due to the reduced surface area, however that risk still exists for the jetty piles. KIPT is encouraged to undertake action to colonise the piles with indigenous fauna and flora
- identified that the redesigned structure does not remove the risk of introducing exotic marine pests associated with shipping movement and reiterated the need for management of ballast water and biofouling measures to be detailed in a Marine Pest Management Plan and a Biosecurity Management Plan
- noted that the redesigned structure, although moved further offshore, will not address all of the concerns raised by Yumbah as the issue of biofouling and ballast water exchange associated with the shipping movements remains
- noted that if the proposed port is intended to be a First Port of Entry, KIPT must discuss this matter with the Australian Government regarding requirements that must be met.

13.1.3.2 Environment Protection Authority

The Environment Protection Authority (EPA) considered that the likely potential water quality impacts would be significantly reduced as a result of the redesign of the wharf and removal of the need to dredge and is of the opinion that any potential water quality impacts that may still result during construction and operation of the jetty could be adequately managed. However, other matters raised in the EPA's comments on the EIS, including noise and air quality impacts, still need to be addressed.

The EPA advised that although dredging is no longer proposed for the construction of the proposal, any future dredging that may be required would require an EPA referral pursuant to the Planning and Design Code and the *Planning, Development and Infrastructure (General) Regulations 2017*.

The EPA advised that although the construction noise from the amended design activity will vary, the requirements under the *Environment Protection (Noise) Policy 2007* remain.

The EPA noted that the Addendum removed some of the noise mitigation measures for piling activities, including 'evaluating piling methods that have lower noise emissions' (section 14.4.3 EIS) and 'low-noise impact techniques such as suction piling or vibro-piling should be used in preference to impact piling where possible' (section 18.4.5 EIS). The EPA advised that these measures are still relevant to the new design and should be maintained.

The EPA requested a commitment from the proponent, as had been stated in the EIS, that the removal of all drill cuttings (if required to install the piles) be retained on the construction barge for subsequent land disposal.

The EPA raised concern about potential impacts of pile driving on cetaceans and supported the proposal of shortening the piling period through the use of two piling rigs and avoiding the months when cetaceans are likely to be present. It considered this to be a more effective risk mitigation strategy as opposed to restricting the total piles/blows per day, which was presented as an option, as this would extend the duration of piling activity.

13.1.3.3 Department for Environment and Water

The Department for Environment and Water (DEW) advised that the redesign of the in-water components of the proposal largely addressed its original issues related to the construction and management of a solid causeway and no further comment was provided.

13.1.3.4 Commonwealth Department of Agriculture, Water and the Environment

No further comment was provided.

13.2 Post-bushfire correspondence

Following the December 2019 / January 2020 bushfires, multiple correspondence has been received from a range of parties providing additional support for a wharf facility as it would provide another exit and entry point to the island. It was highlighted that a wharf on the north coast could be used should the wharf at Penneshaw become unusable if road access from Kingscote is cut off. The ability for the wharf to be used to import materials required to rebuild destroyed infrastructure and homes, reducing the reliance for such on the Penneshaw facility, was also raised.

Whilst this correspondence is not recognised as formal submissions under the Major Development assessment process, they are acknowledged and noted.

14 Proponent's response to comments on the EIS and the First (1st) Addendum

Following both consultation periods, KIPT liaised with government agencies and sought to respond to the comments and issues raised in all public, Council and agency submissions in a Response Document dated March 2020.

Below is a summary of KIPT's response. As the revised dredging and construction of a causeway are no longer components of the proposal, the summaries below do not address any concerns that were raised in relation to these components or their potential impacts.

14.1 Community / public submissions

KIPT responded to the key issues/concerns raised in public submissions as follows:

- The redesign has addressed the majority of concerns raised related to seagrass loss, marine water quality and coastal processes
- Smith Bay is the best location as the other sites have constraints (as identified in the EIS) or would not be commercially feasible
- Smith Bay was chosen in part as it already contains a commercial operation and is not a tourist location
- Access by overseas vessels to Australian ports is strictly regulated by the Commonwealth under legislation. All international vessels would have to clear biosecurity controls/measures on the mainland prior to continuing to Smith Bay
- They are committed to preparing a Biosecurity Management Plan and Marine Pest Management Plan
- Tugs from Port Adelaide would not be used in either construction or operation phases to mitigate ballast water-exchange biosecurity risk
- There is no credible basis to the claims that the proposed facility at Smith Bay would have any material adverse impact on Yumbah's abalone farm. KIPT is of the view that the two industries can co-exist
- Forestry is a viable sustainable industry on in the island, subject to the ability to remove the timber and commence a second rotation, and remains so despite the impact of the recent fires
- The risk to whales and dolphins from shipping movements is low: vessels will approach and leave the facility slowly (2-3 knots); operational noise will be infrequent and of short duration; vessel strike rate is predicted to be one in every 300 years; average reported whale sightings is 6 per year which is very few when compared with other sightings in the state; and although dolphins traverse the area, Smith Bay is not a breeding area and they use other bays along the north coast
- The proposed site is not located near any tourist areas; the preferred route does not include any heavily used roads or main tourist routes; larger vehicles will be used to reduce the number of vehicles and trips on the roads; and reduced speeds will be implemented for haulage vehicles

- The final route, required road upgrades, maintenance, vehicle types, hours of haulage and funding arrangements will be identified and negotiated following approval with the Kangaroo Island Council and State Government
- There is no evidence that high-performance vehicles lead to an increase in road kill
- They are committed to undertaking inspections of the transport route to relocate roadkill from the immediate vicinity of the road/roadside to deter scavenging animals
- They are liaising with the real estate agents and developers on the island to secure accommodation for its workforce (both temporary and ongoing)
- Plantation forestry adds to Kangaroo Island's 'clean and green' image as it is a sustainable industry that sequesters and stores carbon from the atmosphere.

14.2 Yumbah Aquaculture (Yumbah)

KIPT responded to the key issues/concerns raised by Yumbah as follows:

- The redesign has addressed the majority of concerns raised by Yumbah (and was redesigned based upon Yumbah's comment in its submission on the EIS), in particular those related to marine water quality and coastal processes, therefore the proposal will not have any measurable effect on Yumbah's water intake systems
- Information in the EIS was based on direct commercial and research experience with abalone aquaculture facilities around the world including at farms in Australia, Chile, China and Malaysia, and although Yumbah's systems may differ from these, this does not mean the EIS contains fundamental errors or inaccuracies
- They are committed to preparing a Biosecurity Management Plan and Marine Pest Management Plan
- Tugs from Port Adelaide would not be used in either construction or operation phases to mitigate ballast water-exchange biosecurity risk
- They acknowledged the limited sample size for ecotoxicology testing and wild sourcing as farmed abalone could not be sourced from any producer. EPA and PIRSA were satisfied with the sample size given the constraints
- Application of anti-corrosion marine paints will be done off-site, resulting in no risk to the marine environment
- There is no evidence that the proposal will have adverse effects on sea dragons
- The piles will be colonised with microalgae over time and may provide additional sea dragon habitat
- The Marine Activity Zone will not affect rights of access held by Yumbah. If Yumbah advise the proponent that they require access during the construction period, the proponent commits to negotiate a safe and mutually convenient time for that access
- Noise impacts on whales and other cetaceans remains the same as presented in the EIS. Detailed remodelling of underwater noise impact assessment is not considered necessary
- The redesigned jetty allows for marine fauna to navigate through the infrastructure, which could not occur with the causeway
- Coastal processes were re-analysed and it was identified that there are no measurable effects on either water quality or coastal processes associated with the revised design

- Woodchip stockpiles will be bunded and have impervious bases to prevent leachate from entering the groundwater
- The modelling showed that dust deposited on shade cloth when entering the tanks would not become suspended into water flowing through the abalone grow-out tanks and would stay in suspension longer than the retention time of the water in the tanks and therefore be flushed out and not impact the abalone
- More dust and light mitigation measures will be added
- All issues in relation to potential impacts on Yumbah's operations have been adequately dealt with and both industries can co-exist
- The 5 nautical mile separation relates to what is considered a reasonable distance between abalone farms and other farms or productive reefs (Western Australia Department of Fisheries) to protect them from infection by pathogens from other operating farms. This recommendation does not include separation of an abalone farm from an operating port (as proposed). The proponent also noted that Yumbah's proposed facility at Bolwarra (Yumbah Nyamat) will be 2.6 nautical miles from the Port of Portland, which is a large-scale port facility supporting 300 bulk freight vessels per year and has high activity from fishing and recreational vessels.

14.3 Kangaroo Island Council

The proponent responded to the key issues/concerns raised by the Kangaroo Island Council as follows (summarised):

- Locations west of Smith Bay would be in a Marine Park, be subject to high energy wave conditions, do not have access to three-phase power and would be in the most bushfire-prone part of the island
- Smith Bay is the best location as the other sites have constraints (as identified in the EIS) or would not be commercially feasible
- Other design solutions were considered (based upon public submissions received) however they are unfeasible or impractical
- Scope as a multi-use port is inherent in the design, which must accommodate different timber products. Removing the need for a multi-use facility would not change the design
- Details of other potential future uses cannot be provided and would be subject to separate approvals
- Changes to the in-water design will result in no impacts to Yumbah's operations, therefore Yumbah will not incur economic loss or be required to close as a result of the port facility
- Future expansion plans of Yumbah were not considered in any economic analysis as they are unknown and undisclosed, and no evidence was provided to show that Yumbah could not expand its operations should it choose to do so
- All commitments outlined in the EIS will be achieved, where still relevant, and the commitment list will be updated based on the amended design.
- Traffic and transport issues, including funding arrangement, still need to be resolved in agreement with the Council and State Government. This will be explored in detail following approval.

14.4 State Government Agencies

14.4.1 Department of Primary Industries and Regions, South Australia

The proponent responded to the key issues/concerns raised by the Department of Primary Industries and Regions, South Australia (PIRSA) as follows (summarised):

- They are committed to preparing a Biosecurity Management Plan and Marine Pest Management Plan in consultation with PIRSA.
- They will ensure anti-fouling paint will not be used on the steel jetty piles to enable indigenous marine growth (flora and fauna) on the piles
- They acknowledge that the aquaculture licences for the adjacent Yumbah facility included a large number of species, however the proponent considered that many of these species cannot be farmed in a practical way due to limitations of the systems and given that they currently produce only abalone, the proponent did not consider it necessary to address potential impacts on other species that are not farmed at that location
- Following discussion with the Australian Government to allow international ships to berth at the facility, regardless of the clearing quarantine requirements at a mainland port, the facility might be required to be registered as a First Point of Entry port. The proponent is continuing discussion with the Australian Government regarding this matter

PIRSA reiterated that it is supportive of the development, noting the requirement for the implementation of a Marine Pest Management Plan and Biosecurity Management Plan, and that these plans must include requirements for ongoing monitoring and reporting. PIRSA advised that although supportive of the plans, they will not remove all risks associated with the proposed development.

14.4.2 Environment Protection Authority

The proponent responded to the key issues/concerns raised by the Environment Protection Authority (EPA) as follows (summarised):

- Additional mitigation measures are being considered to further reduce dust impacts, including lowering the height of the woodchip stockpiles, covering transfer points, and water sprays during the final design stage
- Information regarding visual dust management measures on a continuous basis will be included in the Environmental Management Plans
- Revised noise impact assessment and provision of addition information to address Clause 20(6) (a)-(f) of the Environment Protection (Noise) Policy
- Additional mitigation measures are being contemplated to further reduce noise impacts, including an additional 3m high barrier to the south of the chip stacker, and identification and mitigation at, or near, the source/s of noise will be formally considered during the final design stage, in liaison with noise experts and the EP.
- Where possible, piling operations will be avoided in winter during the whale migration and dolphin breeding season. Details will be included in the Environmental Management Plans
- They are committed to the use of marine fauna observers. Details will be included in the Environmental Management Plans
- They are committed to exploring opportunities to use alternative piling methodologies and multiple piling rigs to reduce the noise impacts and duration of piling and avoid the period

where cetaceans are more likely to be present, noting that this is dependent upon the availability of two piling rigs and logistical arrangements

- They are committed to retaining drill cuttings on the construction barge for subsequent land disposal
- Additional information will be provided regarding the size, design and construction of the proposed wastewater retention basin (including detailed design, analysis of various liner types, material cover over liner, desludging access, subgrade preparation, embankment slope) which will be submitted for approval prior to construction and be in accordance with EPA requirements
- Regardless of the removal of dredging, they are committed to the development and implementation of a Before and After Control and Impact (BACI) monitoring program to monitor the effects of ship movements on marine communities near the wharf

The EPA noted the proponent's responses and advised that the BACI monitoring program should cover both construction and operational phases.

The EPA requested further clarification on noise impacts in relation to meeting the General Environmental Duty (GED) provision of the *Environment Protection Act 1993*. The EPA subsequently advised that it was not satisfied that the proponent had demonstrated compliance with the GED nor provided sufficient justification that its inability to do so was warranted (discussed in detail at section 5.4.5.2), however it considers the overall risk of impact on human health associated with noise impacts are low, and, if approved, outstanding noise issues could be dealt with in the final design of the facility.

14.4.3 Department for Environment and Water

The proponent responded to the key issues/concerns raised by the Department for Environment and Water (DEW) as follows (summarised):

- A survey of the intertidal community inhabiting the foreshore was undertaken to inform the Addendum. As a result of the redesign, no part of the foreshore will be lost, and only minimal temporary impact will occur during the installation of the jetty piles
- Details regarding indirect seagrass impact provided
- Regardless of the removal of dredging, they are committed to the development and implementation of a Before and After Control and Impact (BACI) monitoring program to monitor the effects of ship movements on marine communities near the wharf
- They are committed to a monetary payment to the Native Vegetation Council (NVC) to offset seagrass loss.

DEW advised it was satisfied with the proponent's response.

14.4.4 Kangaroo Island Natural Resources Management Board

The proponent responded to the key issues/concerns raised by the Kangaroo Island Natural Resources Management Board (KI NRMB[269]) as follows (summarised):

- Issues associated with ballast water exchange within the Same Risk Area will be addressed in a Biosecurity Management Plan

[269] Now the Kangaroo Island Landscape Board (KILB)

- They are committed to preparing a Biosecurity Management Plan and Marine Pest Management Plan in consultation with the KI NRMB
- They are committed to undertaking inspections of the transport route to relocate roadkill from the roadside to detract scavenging animals (including Rosenberg's goanna)
- Traffic and transport issues still need to be resolved in liaison with the Kangaroo Island Council and the Department of Planning, Transport and Infrastructure[270].

The KI NRMB did not raise any further issues.

14.4.5 Department of Planning, Transport and Infrastructure

The proponent responded to the key issues/concerns raised by the (then) Department of Planning, Transport and Infrastructure as follows (summarised):

- The arterial roads proposed for use are only gazetted for up to 23m long B-Double movements and that if larger vehicles are proposed, road infrastructure improvements will be required
- Government funding should be provided to address the road upgrades and maintenance required to support the proposal, due to the economic benefits of the proposal to the state and region.

DPTI advised that it continues to support the use of a defined route, as opposed to the use of General Access Vehicles on a significant number of roads.

DPTI noted the proponent's response and advised it is committed to working with the proponent in relation to transport-related matters. DPTI recommended that, if the facility is approved, the proponent must prepare a transport plan that includes, but not be limited to:

- identification of route(s) – including any alternatives that may reduce potential infrastructure requirements and/or suitable proposed routes for larger heavy vehicle combinations
- vehicle types and heavy vehicle combinations (current or proposed)
- the potential for road infrastructure upgrade requirements
- operating times
- other logistical considerations.

DPTI reiterated that all arterial road improvements and ongoing maintenance required to facilitate the development are to be fully funded by the proponent.

DPTI also advised that if approved, the facility at Smith Bay would become a harbor and port under the *Harbors and Navigation Act 1993* and would be subject to the relevant provisions of that Act and its regulations. As the facility will be privately owned and operated, the designated port operator would be required to enter into a Port Operating Agreement with the Minister for Infrastructure and Transport. This is a separate process.

14.4.6 SA Housing Authority

The proponent responded to the key issues/concerns raised by the SA Housing Authority by confirming they are committed to working with the island's real estate agents and developers to secure accommodation arrangements for their temporary and permanent workforce.

SA Housing Authority advised it was satisfied with the proponent's response.

[270] Now the Department for Infrastructure and Transport (DIT)

14.4.7 Department for Education

The proponent responded to the key issues/concerns raised by the Department for Education by committing to discussions with the Kangaroo Island Community Education and Department for Education (Transport Services Unit) to minimise interaction between school buses with haulage trucks.

The Department for Education noted the proponent's response and reiterated the need for communication with the principal of Kangaroo Island Community Education and the Transport Services Unit to occur prior to the commencement of, and during, haulage operations, in particular in relation to any proposed road closures and/or necessary diversions that would need to be made to school bus services.

14.4.8 SA Country Fire Service

The proponent responded to the key issues/concerns raised by the South Australian Country Fire Service (SA CFS) as follows (summarised):

- They are committed to preparing a Bushfire Management Plan and Emergency Response Management Plan in consultation with the SA CFS
- Specific details of escape routes, refuges, fire suppression systems, buffers and maintenance of such will be determined in consultation with the SA CFS.

The SA CFS advised it was satisfied with the proponent's response. The SA CFS requested that, if approved, the proponent should contact the Manager, Development Assessment Service, SA CFS as the first point of contact in regard to these commitments.

14.4.9 South Australian Tourism Commission

The proponent responded to the South Australian Tourism Commission (SATC)' concerns by confirming that the use of the facility for cruise ships has been removed from the proposal.

SATC advised it was satisfied with the proponent's response.

14.4.10 Department of the Premier and Cabinet – Aboriginal Affairs and Reconciliation

The proponent responded to the key issues/concerns raised by the Department of the Premier and Cabinet – Aboriginal Affairs and Reconciliation (DPC-AAR) as follows (summarised):

- They are committed to undertaking an on-ground archaeological and anthropological survey with representatives of the Traditional Owners prior to the start of any construction works
- An updated *Smith Bay Kangaroo Island Heritage Assessment (Desktop) – Revised 2019* was provided to replace Appendix S1 of the EIS which involved an additional search of the Central Register with a wider radius from the site, inclusion of the approximate location of the Smith Bay Artefact Site, updated Predictive Risk Assessment, and acknowledgment of the coastal location of the project site as well as nearby drainage features. The risk of encountering sub-surface Aboriginal sites is listed as 'Moderate to High'
- They are committed to allow archaeological monitoring by Aboriginal groups during earthworks to detect possible subsurface deposits
- They are committed to preparing a Cultural Heritage Management Plan in consultation with the Traditional Owners and with the assistance of the proponent's heritage provider

- Attempts have been made during the preparation of the EIS to contact the Ramindjeri Heritage Association, with no success.

DPC-AAR noted the response, including the updated heritage assessment, and reiterated that consultation with all Traditional Owners with asserted heritage interests on Kangaroo Island is recommended, particularly in light of the 2019/2020 bushfires that damaged many Aboriginal sites. DPC-AAR reiterated the need to develop a Cultural Heritage Management Plan. DPC-AAR is committed to working with the proponent and offered to provide a legislative awareness session to employees and contractors to increase awareness of the Act, heritage risk management processes and Aboriginal heritage in general.

The proponent is encouraged to continue to liaise with DPC-AAR.

14.4.11 Commonwealth Department of Agriculture, Water and the Environment

The proponent responded to the key issues/concerns raised by the Commonwealth Department of Agriculture, Water and the Environment (DAWE) as follows (summarised):

- They reiterated that the risk to Southern right whales from vessel strike and construction noise is considered low as vessels will approach and leave wharf at low speeds and operational noise will be infrequent and temporary
- There is no evidence to suggest that ports or shipping are implicated in the recent decline of the south-eastern population of Southern right whales
- Any future uses of the facility by third parties will be subject to separate assessment and approval and, as such, details related to potential increased shipping movements and potential impacts on the Southern right whale of any such uses cannot be provided at this time
- They have identified Kangaroo Island echidna 'roadkill hotspots'[271], which includes roads that are proposed as part of the haulage operations and advised that these places cannot be avoided due to the location of the plantations
- They provided information on Kangaroo Island echidna behavioural (including movement) patterns and advised that mitigating potential vehicle strikes based on behavioural patterns would not be an effective option as echidna behaviour is too variable to pinpoint a period of the day, time of the year or areas where trucks could avoid echidnas
- The most effective mitigation measure is to reduce vehicle numbers through the use of larger vehicles, however they cannot commit to the use of larger vehicles as road upgrades are required to accommodate this which is outside the proponent's control
- They will accept some limit on operating hours for truck movements to avoid echidna strike, however this will not be conducive to its operations and would result in more frequent truck movements than that presented in the EIS.

DAWE did not raise any further issues.

[271] Based upon information collected by Kangaroo island resident, Dr Peggy Rismiller over approximately 30 years

15 Second (2nd) Addendum to the EIS

After taking into consideration the EIS (and accompanying appendices), the 1st Addendum to the EIS, submissions (public and agency), the proponent's Response Document, and following extensive liaison with relevant state and Commonwealth agencies, the Chief Executive, Department for Infrastructure and Transport, under delegation from the State Planning Commission (SPC) provided advice on the proposed development to the Minister for Planning and Local Government for consideration.

Following consideration of these documents, the Minister declined to make a decision regarding the development on the basis that:

- the information presented was inadequate and incomplete for the purpose of enabling a decision to be made
- significant matters remain unresolved
- further and better particulars were required in relation to:
    - the design (and achievability within the location)
    - how matters pertaining to marine pest management are proposed to be managed
    - how matters pertaining to road and traffic management are proposed to be dealt with.

Subsequent to this advice from the Minister, on 30 October 2020 the SPC wrote to the proponent inviting submission of the following further information for assessment:

- Traffic and Transport matters
    - Identification of all parts of the road network that will be used to transport timber from plantations to the site and proposed port and the hours of haulage operation
    - Identification of all impacts of the proposed use of the road network, including in relation to the road network itself, native fauna and other users, including consideration of school bus routes and timetables
- Identification of how the proponent proposes to mitigate the impacts associated with the proposed use of the road network.

- Marine Pest Management
    - Preparation of a Marine Pest Management Plan containing measures to address the risk of aquatic pest and disease transfer from Port Adelaide, including but not limited to the following issues:
        - commitment to not uptake or exchange ballast water within Port Adelaide (within Gulf St Vincent is acceptable) for all vessels using or servicing the facility (including tugs)
        - development of biofouling management plans for each vessel or barge used (including tugs) both during construction and operation of the facility
        - ensuring that all vessels used (including tugs) both during construction and operation of the facility, are appropriately cleaned (minimal biofouling on hull and niche areas and antifouling paints within manufactures application specifications) prior to arriving at Kangaroo Island (or South Australia if arriving from interstate).

- Design & Engineering
    - A site layout plan identifying all structures to be constructed on the site

- Design plans or additional details for all structures within or having a direct impact on the marine environment
- An engineering report or similar, confirming that the design identified in the plans (EIS and Addendum to the EIS) can be developed as identified in the plans, taking into consideration the physical dimensions and the environmental parameters for that location as described in the EIS.

15.1 *Proponent's response to the additional information requested by the Minister*

On 22 December 2020 the proponent submitted a Second (2nd) Addendum to the EIS providing the additional information requested by the Minister. A summary is provided below:

Traffic and Transport[272]

- It is proposed to harvest up to 712 tonne timber per year during the first five years of salvage harvest (fire-affected timber).
- Specified General Access Vehicle routes for the first five years of salvage harvest[273] are to approach Smith Bay from the east via North Coast Road, utilising Playford Highway and/or South Coast and Birchmore roads (depending on the location of the plantation being harvested)
- Haulage hours will be Monday to Friday from 6.00am to 6.00pm, with the option of 6.00am to 12noon on Saturdays as required
- 19m semi-trailers or high productivity vehicles (HPVs), being either 7-axle, 23m PBS truck and dog trailer with a payload of 38 tonnes; or an 8-axle, 23m PBS truck and dog trailer with a payload of 45 tonnes are proposed for use
- The proposed number of trips per day based upon updated information is:
    - Semi-trailers – approx. 18 truck movements per hour, equalling approx. 1 truck every 3.5 minutes along the route, or
    - 7-axle trucks – approx. 12 trucks movement per hour, equalling approx. 1 truck every 5 minutes, or
    - 8-axle trucks – approx. 10 truck movements per hour, equalling approx. 1 truck every 6 minutes[274]
- They are committed to developing individual Traffic Management Plans (TMPs) for each plantation to address the specific issues associated with transporting timber from that plantation, including identification of the route to be taken, risk analysis, and hazard controls. Each TMP would be approved by the relevant road authority
- They are committed to developing a separate TMP in consultation with KI Community Education and the Department of Education to manage the impact of the proposed haulage on all school bus routes
- They are committed to developing a tripartite road management agreement with the Kangaroo Island Council and the Department for Infrastructure and Transport (DIT)
- They are committed to making a contribution to the cost of sealing a section of North Coast Road (amount not specified)

[272] Second Addendum, Chapter 2 and Appendix A

[273] Second Addendum, Figures 2-1 to 2-5

[274] Estimates based upon figures provided in Table 2-2, page 13 of the Second Addendum

- They are committed to funding upgrades to and maintenance of all plantation feeder roads[275] (Council roads) and to upgrade Freeoak Road[276] which connects the proposed port site to North Coast Road
- They are committed to negotiating the funding and delivery of road upgrades after the road assessment (currently being undertaken by DIT) with all parties
- They are committed to developing a Driver Code of Behaviour including, among other things, noise and use of engine brakes, dust mitigation techniques, speed limits and times of travel (Driver Code of Behaviour for Harvestco, the haulage contractors appointed by KIPT for the first stage of the salvage harvest, provided)[277].

Marine Pest Management[278]

- They are committed to providing a draft Biosecurity Management Plan and a draft Marine Pest and Disease Management Plan during both construction and operation (prepared in consultation with PIRSA) and are committed to finalising these plans after any approval (in consultation with relevant agencies)
- The draft Marine Pest and Disease Management Plan:
    - will prohibit ballast water uptake from Port Adelaide[279]
    - commits to no in-water cleaning of vessels on Kangaroo Island[280]
    - commits to providing specific Biofouling Management Plans for each vessel prior to departure for Kangaroo Island[281].

Design and Engineering[282]

- The marine component of the facility remains as described in the EIS and the subsequent Addendum Report, namely a 650 m piled jetty structure supporting a suspended deck jetty; a floating pontoon for the wharf which is held in place by restraining dolphins; and an enclosed conveyor system to transport wood chips from the on-land stockpile to the ships' holds[283].
- Detailed plans provided:
    - overall offshore plan
    - overall offshore section
    - partial plan (and partial elevation) of the transition from the shore to the jetty
    - general arrangement of the where the jetty connects to land
    - typical section of the piled jetty
    - section of the woodchip feed system
    - section of the reclaim and ship-loading system
    - wharf layout and elevation
- Provision of an engineering report confirming that the proposed structures can be built as deigned, taking into consideration the conditions to be encountered at the site.

[275] Second Addendum, Chapter 2, page 16. Roads identified in Table 2-3, page 13.

[276] Second Addendum, Chapter 2, page 16

[277] Second Addendum, Appendix A3

[278] Second Addendum, Chapter 2 and Appendix B

[279] Second Addendum Appendix B2, section 4.2.3 and Appendix B3, section 4.3.3

[280] Second Addendum Appendix B2, section 4.2.4 and Appendix B3, section 4.3.4

[281] Second Addendum, Table 3-1

[282] Second Addendum, Chapter 4

[283] Second Addendum, Chapter 1, page 4

15.2 Consultation on the Second (2nd) Addendum

The Minister determined that, as the information provided in the 2nd Addendum to the EIS was additional to what was previously consulted on and may result in a change to, or change in magnitude of impacts, the 2nd Addendum should be released for public consultation.

The 2nd Addendum (additional information) underwent additional public consultation from 14 January to 12 February 2021. One public information session was held during this period on Tuesday 2 February 2021 from 10am to 3pm at Kingscote, Kangaroo Island. The session was attended by 7 people.

Staff from the Attorney-General's Department (Planning and Land Use Services), the proponent and the proponent's consultants (Environmental Projects) were present at this session.

The availability of the 2nd Addendum was advertised in *The Islander* and *The Advertiser* newspapers. The document was made available at the front counters of the Kangaroo Island Council, and the Attorney-General's Department, Planning and Land Use Services[284], as well as online at www.plan.sa.gov.au.

During the consultation period, 78 submissions were received from the public. Of these submissions, the majority (65) comprised overall comments on the proposal or issues that had been raised previously.

Submissions were also received from the Council, DEW, PIRSA, DIT and DAWE.
The main issues/comments raised in submissions that were related to the additional information included:

Department for Infrastructure and Transport

- DIT did not support the use of South Coast Road and identified a preferred route based on an assessment of road geometry, road width, impacts on structures, road safety, and minimising impacts on tourist and other traffic, local communities and the environment
- The route mostly utilises Playford Highway and portion of North Coast Road as the key route to the subject site to approach the site from the east. Finalisation of route is still to be determined
- A number of upgrades will be required to the new route to accommodate High Productivity Vehicles (HPVs) and use of HPVs will be subject to progressing access in accordance with the *Heavy Vehicle National Law (South Australia) Act 2013* (HVNL)
- The route includes roads under the care and control of the Council and will require its consent for access under the HVNL Act
- DIT supported in principle the proposed time of haulage of 6.00m to 6.00pm (which would be considered further as part of approval process under the HVNL Act)
- A Traffic Management Plan (TMP) will be required for the final route. The TMP must detail the route, vehicle size(s), safety impacts and any operational interventions and infrastructure upgrades that may be required to support proposed vehicle movements
- The outcomes of the TMP will need to be subject to a Road Infrastructure Agreement

[284] Previously part of the former Department of Planning, Transport and Infrastructure

- DIT advised that overall, the proposal is supportable, subject to use of the DIT-identified route, and that traffic management issues can be resolved through a TMP and Road Infrastructure Agreement. These must be included as conditions of any approval
- DIT also required that should approval be granted, the proponent be responsible for any damage to transport assets caused by the development, and any repair and/or replacement is to be at the proponent's cost.

Primary Industries and Regions, South Australia

Draft Marine Pest and Disease Management Plan – construction and operation

PIRSA:

- advised that an external audit/review is required to provide additional assurance as to the ongoing commitment of individuals and the organisation to the activities outlined in the plan(s). PIRSA will remain the decision maker on required biofouling management of vessels and vessels entries to the port
- advised that the onus to undertake recommended biofouling management action and associated cleaning and/or inspection costs will remain with the proponent / vessel operator
- advised that the plan referred to a Marine Pest and Disease Monitoring Program, however the program had not been provided to PIRSA for review. PIRSA requested the provision of the program
- required information to demonstrate how the proponent will ensure that no abalone or oysters enter the study area via the port (as stated in the draft plan)
- advised that as the port is proposed to be A Port of First Entry, the plan must also consider exotic aquatic notifiable diseases, in particular paralytic shellfish poisoning, which can affect the marine environment and aquaculture
- required surveillance and control of new weeds (in particular declared weeds) be undertaken at the proposed port site including measures to ensure seed (particular the fine seed of Cape Tulip) is not spread during transport. PIRSA recommended that a comprehensive Cape Tulip control program across KIPT land be developed
- advised that vegetation buffer strip to reduce run-off from the site must be planted well in advance of construction to give time for plants to grow and provide the buffer function outlined
- advised that the Draft BMP is an acceptable example off that which could be adopted for vessels (subject to recommended refinements).

Department for Environmental and Water

- DEW disputed the proponent's claim that 'the existing local and tourist traffic would remain the most significant contributor to fauna deaths on the Island's roads' and 'there is no evidence that heavy vehicles are disproportionately responsible for roadkill'[285]. DEW advised that most animal strikes occur around dusk and dawn and that tourism traffic along the proposed routes is not expected to increase significantly at these times (noting that limited tourism traffic occurs between 6am and 9am).

[285] Second Addendum, section 2.4.4

- DEW advised that there is currently a high number of roadkill as a result of heavy vehicle traffic along Hog Bay Road associated with the early freight ferry, and as such it is expected that heavy vehicle traffic in the early hours of the day when more macropods[286] are mobile will result in more roadkill than average tourist traffic.
- DEW noted that larger vehicles will result in fewer trips, which is preferable, however advised that due to increased braking distance and avoidance capacity heavy vehicles pose a significant risk to wildlife.
- DEW agreed that driver speed of 50km/hr will reduce animal strike but noted that this will only be applied to unsealed roads, and that the included Driver Code of Behaviour (Appendix A3) refers to exemption to this 'self-imposed limit'. DEW requested further information regarding this, in particular noting that in general the Code of Behaviour allows for travel at posted speed limits (up to 100km/hr).
- DEW advised that neither DEW, National Parks and Wildlife Services, or the Kangaroo Island Landscape Board were consulted during the developing of the draft Marine Pest Management Plan. DEW requested that, if the proposal is approved, these parties be consulted during the preparation and approval of any final plan.
- DEW raised concern that the draft Marine Pest Management Plan does not describe marine pest monitoring in detail (i.e. how often and how rigorously monitoring is to be undertaken). DEW noted that this detail is proposed to be finalised after approval is obtained. DEW prefer that details of the monitoring program, including timing, frequency and intensity, as well as trigger points for action, be defined prior to any approval, or at a minimum be included as part of the conditions of approval, should the proposal be approved.
- DEW also requested consultation at the local level (National Parks and Wildlife Services and Kangaroo Island Landscape Board) during preparation of the final Biosecurity Management Plan, should the proposal be approved, to ensure local risks are identified and considered.

Commonwealth Department of Agriculture, Water and the Environmental

- DAWE advised that the proposed reduced haulage hours of 6am to 6pm will not assist in avoiding or mitigating potential impacts to native fauna (e.g. the Kangaroo Island echidna) which are active during these hours and that haulage hours should take into account peak times for fauna movement.
- Proposed minor works to intersections (outlined at 2.3.6 of the 2nd Addendum) may impact on habitat for threatened native fauna (e.g. Kangaroo Island echidna and southern brown bandicoot) or the Kangaroo Island narrow-leaved mallee woodland. DAWE requested that the proponent further detail to identify if potential disturbance is likely to occur, including location and spatial extent of any such disturbance.
- DAWE recognised that other road users may contribute to vehicle strike for native fauna, however disputes the proponent's claim that 'the existing local and tourist traffic would remain the most significant contributor to fauna deaths on the Island's roads'[287]. DAWE advised that the additional contribution of the project is relevant and should be addressed, particularly in a context where the species is less plentiful than previously due to the 2019/2020 bushfires.

[286] Plant-eating marsupial mammal of an Australasian family that comprises the kangaroos and wallabies

[287] Second Addendum, section 2.4.4

- DAWE disputed the proponent's claim that 'there is no evidence that heavy vehicles are disproportionately responsible for roadkill'[288]. DAWE notes that larger vehicles will result in fewer trips, which is advantageous, however advised that due to reduced manoeuvrability, increased braking distance and with reduced visibility of small animals, trucks pose a greater risk to wildlife than a small car.
- DAWE advised that the proponent's argument that the government's desire to increase tourism on Kangaroo Island 'will increase road use and inevitable result in greater adverse impacts on native fauna'[289] is irrelevant for consideration of the impact that this proposal will on Matters of National Environmental Significance. Further, the extent that it is relevant is that it implies that pressure on the Kangaroo Island echidna is increasing, and therefore the pressure provided by the proposal is important. DAWE requested further information on the proposal's likely impact on native fauna.
- DAWE supported the use of Traffic Management Plans (TMPs), however advised that any associated clearance carried out in line with a TMP that may result on a significant impact on Matters of National Environmental Significance (and require referral to DAWE for assessment).
- DAWE required that the Driver Code of Behaviour include driver education on native fauna (especially the Kangaroo Island echidna and southern brown bandicoot) and that it must include a reporting procedure for vehicle strike incidents to monitor impacts.

Kangaroo Island Council

- Council maintained that the proposal should not be supported (as per previous submissions and correspondence) and does not support Smith Bay as the location.
- Council did not consider that KIPT has adequately addressed the issues required of the 2nd Addendum:
    - Funding of road upgrades and ongoing maintenance has not been identified
    - Social, economic and environmental impacts of HPVs on the local community, tourists and wildlife has not been adequately considered, with limited analysis undertaken
    - Council recommended that an independent peer review by appropriately qualified personnel be sought on the draft Marine Pest Management Plan prior to decision on the proposal
    - Continued concern about the potential impact of the Kangaroo Island's 'brand' and unique qualities of the proposal.

Public

Comments of relevance specific to the information contained in the 2nd Addendum included:

- Concern over impacts associated with the new proposed route:
    - use of South Coast Road (main tourist road), North Coast Road (directly past Yumbah and residents) and proximity of trucks movements to Kingscote (being the main town on the island)
    - volume of haulage traffic (reduced hours but no reduction in haulage movement will result in trucks passing on a more regular basis)
    - wildlife/fauna strike

[288] Second Addendum, section 2.4.4

[289] Second Addendum, section 2.4.4

- Funding of road upgrades and ongoing maintenance (i.e. no new information contained).

Proponent's Response

The proponent was invited to respond to comments (both agency and public) on the 2nd Addendum.

The proponent responded to the key issues/concerns raised that related to the additional information as follows (summarised):

DIT

- The proponent concurred that South Coast Road is not suitable and acknowledged and accepted that the primary route for transporting timber to Smith Bay should be the Playford Highway and North Coast Road (as identified by DIT).
- The proponent acknowledged that conditions related to traffic management plan(s) and road infrastructure agreement will be required should approval for the proposal be provided, however disputed the requirement to be responsible for the cost of repair of any damage caused to the road network as a result of the development.

PIRSA

- The proponent responded that a detailed monitoring program has yet to be developed and that this will occur post any approval. The proponent agreed that a third party independent review would be useful and will be considered.
- The proponent responded that the risk of paralytic shellfish poisoning is considered negligible as the required environmental conditions to enable blooms to occur do not exist at Smith Bay.
- The proponent responded that whilst Yumbah does have licence to farm oysters at its Smith Bay facility, it currently does not do so. The proponent considers that Smith Bay is not conducive to farming oysters and as such any risk of paralytic shellfish poisoning is negated.
- The proponent committed to ensure that no abalone or oysters will enter the subject site through employee and contractor introductions. All staff will be required to undergo an induction that includes biosecurity management.
- The proponent responded that weed management, including declared weeds, will be contained within the Terrestrial Pest Management Plan, prepared in consultation with Landscapes KI, DEW and National Parks and Wildlife Service.

DEW

- The proponent responded that to help assist fauna strike, reduced speed limits can be applied in circumstances where the reduced speed will not create a hazard for other road users.
- The proponent advised that the draft Marine Pest Management and Biosecurity Plans were prepared in consultation with PIRSA as was required by the Minister and committed to preparing the final plans in consultation with DEW, National Parks and Wildlife Service and Landscape KI (formerly KI NRMB) after the development has been approved.
- The proponent advised that marine pest monitoring, although not included in the draft plans submitted as part of the 2nd Addendum, will be included in the final plans.

DAWE

- The proponent maintained that the use of HPVs will reduce the potential impacts of animal strike incidents.

- The proponent responded that curfews on operating hours would not provide a benefit for the Kangaroo Island echidna or other native species on Kangaroo Island and as such, is unwilling to consider further restrictions on the operating hours of haulage as this would increase the frequency of truck movements.
- The proponent reiterated its commitment to driver education for the Kangaroo Island echidna, which will include fauna awareness and reporting requirements for vehicle strike.
- The proponent responded that an assessment of any minor works required along the haulage route will be undertaken prior to any on-ground works occurring to determine impacts, and if required the proposed works will be referred subject to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

Kangaroo Island Council

- The proponent reiterated that Smith Bay is the best site on Kangaroo Island for a deep water port.
- The proponent responded that it does not expect the cost of road funding to be borne by the local community. The proponent advised that they will be responsible for funding any upgrades and maintenance required to plantation feeder roads however the issue of road funding options for the core route to Smith Bay requires continued discussion with Council and State Government to resolve.

Public

- The proponent responded that they are in discussions with DIT in relation to sealing the unsealed portion of North Coast Road from Emu Bay to Smith Bay to mitigate adverse impacts of driving along this section of road.
- The proponent concurred that South Coast Road is not suitable and is in negotiations with DIT regarding a more suitable route primarily utilising Playford Highway and North Coast Road for transporting timber to Smith Bay.

16 Appendix 2

16.1 *Planning Strategy*

Principles and policies of the region plan relevant to the proposal include:

Principles

1. Recognise, protect and restore Kangaroo Island's environmental assets
5. Protect and build on the island's strategic infrastructure
6. Retain and strengthen the economic potential of the island's primary production land
7. Strengthen local commercial fishing and aquaculture industries

Policies

1.5 Protect natural coastal, marine and estuarine areas of high conservation, landscape or environmental significance by limiting development in these areas. Development may require such a location in limited circumstances — for example, a tourism development of state significance — in which case the development's social and economic benefits must be shown to outweigh the environmental and amenity impacts.

1.9 Recognise areas of high biodiversity value, and locate and design development to prevent the loss, degradation and/or fragmentation of native vegetation and any loss of species and/or ecological communities

1.11 Avoid any impact on biodiversity, where possible; if impact is unavoidable, it should be minimised and offset. A comprehensive offset scheme, based on existing offset provisions and drawing on models such as bio-banking, will be developed to provide for a net gain to biodiversity through flexible offsets. The offsets could be made across regions or by funding designated rehabilitation programs. The scheme will also encourage carbon offsets.

1.13 Acknowledge, protect and manage areas of significant landscape and amenity value (particularly coastal— see 'Scenic landscape' areas on Maps C1 and D1) and areas that form attractive backgrounds and entrances to towns and tourist developments.

16.2 *Planning and Design Code*

The Planning and Design Code sets out the 'rules' (planning policies) for what can be done within the area and zone.

Provisions relevant to this proposal include the following:

Conservation Zone

DO 1 - The conservation and enhancement of the natural environment and natural ecological processes for their ability to reduce the effects of climate change, for their historic, scientific, landscape, habitat, biodiversity, carbon storage and cultural values and provision of opportunities for the public to experience these through low-impact recreational and tourism development.

<u>Land Use</u>

PO1.1 - Small-scale, low-impact land uses that provide for the conservation and protection of the area, while allowing the public to experience these important environmental assets.

PO1.2 - Development is primarily in the form of:

a. directional, identification and/or interpretative advertisements and/or advertising hoardings for conservation management and tourist information purposes
b. scientific monitoring structures or facilities
c. a small-scale facility associated with the interpretation and appreciation of natural and cultural heritage such as public amenities, camping grounds, remote shelters or huts
d. structures for conservation management purposes.

PO1.3 - Farming activities occur on already cleared land and outside of areas containing native vegetation (including revegetated areas lost through bushfire), coastal dunes and wetlands of national importance.

Environmental Protection

PO3.1 - Development avoids important habitat, nesting or breeding areas or areas that are important for the movement/migration patterns of fauna.

PO3.2 - Development avoids seagrass, mangroves and saltmarshes for their biodiversity value and carbon storage potential.

Built Form and Character

PO4.1 - Development is sited and designed unobtrusively to minimise the visual impact on the natural environment by:
a. using low-reflective materials and finishes that blend with, and colours that complement, the surrounding landscape
b. being located below hilltops and ridgelines
c. being screened by existing vegetation.

PO4.2 - Development is sited and designed to minimise impacts on the natural environment by:
a. containing construction and built form within a tightly defined site boundary
b. minimising the extent of earthworks.

PO4.4 - Development does not obscure existing public views to landscape, river or seascape features and is not visibly prominent from key public vantage points, including public roads or car parking areas.

Access & parking

PO5.1 - Vehicle access points are limited to minimise impact on the natural environment.

PO5.2 - Roads and vehicle access ways are located to minimise vegetation clearance and are constructed of permeable materials.

PO5.3 - Roads are of a width and route to encourage low speeds and minimise impact on the natural environment.

Port / Wharf not listed as either accepted, performance assessed or Restricted = All code assessed

Visitor Experience Subzone (of the Conservation Zone)

DO1 - Tourist accommodation within a conservation area complements visitor experiences, and is located, sited and designed to minimise detrimental impacts on the natural environment and natural ecological processes including their historic, scientific, landscape, habitat, biodiversity and cultural values.

Land use

PO1.1 - A range of tourism, conservation and recreational land uses that provide an experience to visitors, while minimising environmental impacts.

PO1.2 - Small scale shops that cater for the needs of users and visitors of conservation areas.

Coastal Waters & Offshore Islands Zone

DO1 - Protection and enhancement of the natural marine and coastal environment and recognition of it as an important ecological, commercial, tourism and recreational resource and passage for safe watercraft navigation.

DO2 - A limited number of small-scale, low-impact developments supporting conservation, navigation, science, recreation, tourism, aquaculture or carbon storage.

Land use

PO 1.1 - Small-scale, low-impact development for the purpose of conservation, navigation, science, recreation, tourism or aquaculture.

Environmental Protection

PO3.1 - Development is undertaken in a manner which minimises the potential for harm to the marine and coastal environment or to fisheries and aquaculture, including harm arising from actions that introduce a biosecurity risk.

PO3.2 - Development avoids pollution (including turbidity and sedimentation), shading and effects on water flows harming the marine environment both inside and outside of the zone.

PO3.3 - Development avoids important nesting or breeding areas and areas that are important for the movement/migration patterns of fauna.

Built Form & Character

PO 4.1 - Development on offshore islands is sited and designed unobtrusively to minimise the visual impact on the natural environment by:

a. using low-reflective materials and finishes that blend with, and colours that complement, the surrounding landscape
b. being located below hilltops and ridgelines
c. being screened by existing vegetation.

Port / Wharf is not listed as either accepted, performance assessed or Restricted = All code assessed

Coastal Areas Overlay

DO1 - The natural coastal environment (including environmentally important features such as mangroves, wetlands, saltmarsh, sand dunes, cliff tops, native vegetation, wildlife habitat, shore and estuarine areas) is conserved and enhanced.

DO2 - Provision is made for natural coastal processes; and recognition is given to current and future coastal hazards including sea level rise, flooding, erosion and dune drift to avoid the need, now and in the future, for public expenditure on protection of the environment and development.

PO2.1 - Buildings sited over tidal water or that are not capable of being raised or protected by flood protection measures in the future are protected against the standard sea flood risk level and 1m of sea level rise.

PO2.3 - Development will not create or aggravate coastal erosion or require coast protection works that cause or aggravate coastal erosion.

PO4.1 - Development will not unreasonably affect the marine and onshore coastal environment by pollution, erosion, damage or depletion of physical or biological resources; interference with natural coastal processes; or the introduction of and spread of marine pests or any other means.

PO4.2 - Development avoids delicate or environmentally sensitive coastal areas such as sand dunes, cliff tops, estuaries, wetlands or substantially intact strata of native vegetation.

PO4.3 - Development allows for ecological and natural landform adjustment to changing climatic conditions and sea levels, by allowing landward migration of dunes, coastal wetlands, mangrove and samphire areas.

PO4.4 - Development avoids, or in built up areas minimises, impacts on important habitat areas that support the nesting, breeding and movement/migration patterns of fauna, including threatened shorebirds.

PO4.52 - Development is designed so that wastewater is disposed of in a manner that avoids pollution or other detrimental impacts on the marine and on-shore environment of coastal areas.

PO4.6 - Development is designed so that stormwater runoff is disposed of in a manner that avoids pollution or other detrimental impacts on the marine and on-shore environment of coastal areas.

Hazards (Flooding) Overlay

DO1 - Impacts on people, property, infrastructure and the environment from high flood risk are minimised by retaining areas free from development, and minimising intensification where development has occurred.

PO3.2 - Development does not cause unacceptable impacts on any adjoining property by the diversion of flood waters or an increase in flood velocity or flood level.

PO3.3 - Development does not impede the flow of floodwaters through the allotment or the surrounding land, or cause an unacceptable loss of flood storage.

PO4.1 - Buildings and structures used either partly or wholly to contain or store hazardous materials are designed to prevent spills or leaks leaving the confines of the building during a 1% AEP flood event to avoid potential environmental harm.

Hazards (Bushfire Medium risk) Overlay

DO1 - Development, including land division responds to the medium level of bushfire risk and potential for ember attack and radiant heat by siting and designing buildings in a manner that mitigates the threat and impact of bushfires on life and property taking into account the increased frequency and intensity of bushfires as a result of climate change.

DO2 - To facilitate access for emergency service vehicles to aid the protection of lives and assets from bushfire danger.

PO5.1 - Roads are designed and constructed to facilitate the safe and effective:

a. access, operation and evacuation of fire-fighting vehicles and emergency personnel

b. evacuation of residents, occupants and visitors

Native Vegetation Overlay

DO1 - Areas of native vegetation are protected, retained and restored in order to sustain biodiversity, threatened species and vegetation communities, fauna habitat, ecosystem services, carbon storage and amenity values.

PO1.1 - Development avoids, or where it cannot be practically avoided, minimises the clearance of native vegetation taking into account the siting of buildings, access points, bushfire protection measures and building maintenance.

PO1.4 - Development restores and enhances biodiversity and habitat values through revegetation using locally indigenous plant species.

Significant Landscape Protection Overlay

DO1 - Conservation of the natural and rural character and scenic and cultural qualities of significant landscapes.

PO1.1 - Land use intensity is restrained to conserve and enhance natural and rural character.

PO1.2 - Development inconsistent with conserving significant natural and rural landscapes is not undertaken.

PO2.1 - Development is carefully sited and designed to:

a. complement rural or natural character
b. minimise disruption to natural landform
c. integrate existing natural environmental features, including native vegetation
d. minimise impacts on wildlife habitat
e. be low-scale
f. be visually unobtrusive and blend in with the surrounding area
g. be located below ridge lines.

PO2.2 - Buildings and structures are limited to those that:

a. are ancillary, adjacent to, and of the same or lesser scale as existing buildings
b. support desired outcomes of the relevant zone or subzone
c. are used for the ancillary sale of produce associated with a pastoral or rural activity
d. are in the form of high-quality, nature-based tourist accommodation
e. are for rainwater storage
f. are for research or education purposes
g. support conservation or the interpretation of the environment or cultural features.

PO3.1 - Landscaping comprises locally indigenous species to enhance landscape quality and habitat restoration.

Historic Shipwrecks Overlay

DO1 - Historic shipwrecks and historic relics are protected from encroaching development.

PO1.1 - Development is located and designed to avoid potential impacts on historic shipwrecks and historic relics.

Relevant General Code policy

Bulk Handling and Storage Facilities

DO1 - Facilities for the bulk handling and storage of agricultural, mineral, petroleum, rock, ore or other similar commodities are designed to minimise adverse impacts on transport networks, the landscape and surrounding land uses.

PO1.1 - Bulk handling and storage facilities are sited and designed to minimise risks of adverse air quality and noise impacts on sensitive receivers.

PO2.1 - Bulk handling and storage facilities incorporate a buffer area for the establishment of dense landscaping adjacent road frontages to enhance the appearance of land and buildings from public thoroughfares.

PO2.2 - Bulk handling and storage facilities incorporate landscaping to assist with screening and dust filtration.

PO3.1 - Roadways and vehicle parking areas associated with bulk handling and storage facilities are designed and surfaced to control dust emissions and prevent drag out of material from the site.

PO4.1 - Slipways, wharves and pontoons used for the handling of bulk materials (such as fuel, oil, catch, bait and the like) incorporate catchment devices to avoid the release of materials into adjacent waters.

Interface between Land uses

DO1 - Development is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses

PO1.2 - Development adjacent to a site containing a sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate sensitive receivers is designed to minimise adverse impacts.

PO2.1 - Non-residential development does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers) or an adjacent zone primarily for sensitive receivers through its hours of operation having regard to:

a. the nature of the development
b. measures to mitigate off-site impacts
c. the extent to which the development is desired in the zone
d. measures that might be taken in an adjacent zone primarily for sensitive receivers that mitigate adverse impacts without unreasonably compromising the intended use of that land.

PO4.1 - Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers).

PO4.2 - Areas for the on-site manoeuvring of service and delivery vehicles, plant and equipment, outdoor work spaces (and the like) are designed and sited to not unreasonably impact the amenity of adjacent sensitive receivers (or lawfully approved sensitive receivers) and zones primarily intended to accommodate sensitive receivers due to noise and vibration by adopting techniques including:

a. locating openings of buildings and associated services away from the interface with the adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers
b. when sited outdoors, locating such areas as far as practicable from adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers
c. housing plant and equipment within an enclosed structure or acoustic enclosure

d. providing a suitable acoustic barrier between the plant and / or equipment and the adjacent sensitive receiver boundary or zone.

PO5.1 - Development with the potential to emit harmful or nuisance-generating air pollution incorporates air pollution control measures to prevent harm to human health or unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers) within the locality and zones primarily intended to accommodate sensitive receivers

PO6.1 - External lighting is positioned and designed to not cause unreasonable light spill impact on adjacent sensitive receivers (or lawfully approved sensitive receivers).

PO9.3 - Sensitive receivers are located and designed to mitigate potential impacts from lawfully existing land-based aquaculture activities and do not prejudice the continued operation of these activities.

Marinas and on-water structures

DO1 - Marinas and on-water structures are located and designed to minimise the impairment of commercial, recreational and navigational activities and adverse impacts on the environment.

PO1.3 - Navigation and access channels are not impaired by marinas and on-water structures.

PO2.1 - Development is sited and designed to facilitate water circulation and exchange.

Design

DO1 - Development is:

a. contextual - by considering, recognising and carefully responding to its natural surroundings or built environment and positively contributes to the character of the immediate area
b. durable - fit for purpose, adaptable and long lasting
c. inclusive - by integrating landscape design to optimise pedestrian and cyclist usability, privacy and equitable access, and promoting the provision of quality spaces integrated with the public realm that can be used for access and recreation and help optimise security and safety both internally and within the public realm, for occupants and visitors
d. sustainable - by integrating sustainable techniques into the design and siting of development and landscaping to improve community health, urban heat, water management, environmental performance, biodiversity and local amenity and to minimise energy consumption.

PO3.1 - Soft landscaping and tree planting is incorporated to:

a. minimise heat absorption and reflection
b. maximise shade and shelter
c. maximise stormwater infiltration
d. enhance the appearance of land and streetscapes
e. contribute to biodiversity.

PO3.2 - Soft landscaping and tree planting maximises the use of locally indigenous plant species, incorporates plant species best suited to current and future climate conditions and avoids pest plant and weed species.

PO31.1 - Development likely to result in significant risk of export of litter, oil or grease includes stormwater management systems designed to minimise pollutants entering stormwater.

PO31.2 - Water discharged from a development site is of a physical, chemical and biological condition equivalent to or better than its pre-developed state.

16.3 *Building Rules Consent*

This AR does not include an assessment of the proposal against the provisions of the Building Rules under the *Development Act 1993*. Further assessment of the proposed development against the Building Rules will be required following any approval. The proponent would then need to seek building rules consent from either the Kangaroo Island Council or from a private building rules certifier.

Full development authorisation (equivalent to a development approval) would only be made by the Minister *after* the Council or a private certifier has assessed and certified that any 'building work' under the Act, complies with the Building Rules (and has supplied this information to the Minister, as required by Regulation 64 of the Development Regulations 2008). The Building Rules certification must of course be consistent with the development authorisation.

In addition, several components of the development (including signage, stormwater management, monitoring programs and operational protocols) would be required to meet the relevant Australian Standards, EPA Guidelines/Codes and other relevant engineering standards.

16.4 *Environment Protection Act 1993*

The *Environment Protection Act 1993* (EP Act) provides for the management and protection of the environment, including site contamination, air and water quality, noise and waste management. Based on the information provided, the proposed development would involve a prescribed activity of major environmental significance as contained in Schedule 22 of the *Development Regulations 2008,* and prescribed activities of environmental significance as contained in Schedule 1 of the EP Act being: bulk shipping facilities (during ongoing operations)

An EPA licence would be required for this component.

Before making a decision on the proposed development, regard must be made to the object of the EP Act, the general environmental duty and any relevant Environment Protection Policies.

The objects of the Act are:

- *To promote the principles of ecological sustainable development*
- *To ensure that all reasonable and practice measures are taken to protect, restore and enhance the quality of the environment having regard to the principles of ecologically sustainable development, and to prevent, reduce, minimise and, where practicable, eliminate harm to the environment.*

In addition, proper weight must be given to both long and short term economic, environmental, social and equity considerations in deciding all matters relating to environmental protection, restoration and enhancement. The Environment Protection Authority (EPA) is required to apply a precautionary approach to the assessment of risk of environmental harm and ensure that all aspects of environmental quality affected are considered in decisions relating to the environment.

The following Environment Protection Policies are applicable:

- Environment Protection (Water Quality) Policy 2015
- Environment Protection (Air Quality) Policy 2016
- Environment Protection (Noise) Policy 2007
- Environment Protection (Waste to Resources) Policy 2010

Other relevant EPA documents include:

- Bunding and Spill Management Guidelines (2016)

- Wastewater Lagoon Construction (April 2019) Guidelines
- Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry (1999)
- Code of Practice for Materials Handling on Wharves 2007 (updated 2017)
- Code of Practice for Vessel and Facility Management (marine and inland waters) 2008 (revised 2019)
- Handbooks for Pollution Avoidance
- Construction Environmental Management Plan (CEMP) Guideline (2019)

16.5 *Glossary*

Development Act	*Development Act 1993* (and associated Regulations 2008)
AGD	Attorney-General's Department
AHD	Australian Height Datum
AR	Assessment Report
CEMP	Construction Environmental Management Plan
CFS	Country Fire Service
DAC	Development Assessment Commission
DEW	Department for Water
DIS	Department for Innovation and Skills
DAWE	Department of Agriculture, Water and the Environment (formerly the Department of Environment and Energy)
DPTI	(the former) Department of Planning, Transport and Infrastructure
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPA	Environment Protection Authority
EP Act	*Environment Protection Act 1993*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
FTE	Full Time equivalent
INL	Indicative Noise Level
KI LB	Kangaroo Island Landscape Board
KI NRMB	Kangaroo Island Natural Resources Management Board
NTU	Nephelometic Turbidity Unit (NTU) is the unit used to measure the turbidity of a fluid of the presence of suspended particles in-water
OEMP	Operational Environmental Management Plan
PIRSA	Primary Industry and Regions, SA
PDI Act	*Planning, Development and Infrastructure Act 2016* (and associated Regulations)
PLUS	Planning and Land Use Services (within the Attorney-General's Department)

SCAP	State Commission Assessment Panel
SPC	State Planning Commission