TOWNSVILLE OCEAN TERMINAL

ENVIRONMENTAL IMPACT STATEMENT SUBMISSION RESPONSE

RESPONSE TO DEPARTMENT OF PRIMARY INDUSTRIES AND FISHERIES

August 2008



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DEPARTMENT OF PRIMARY INDUSTRY AND FISHERIES

This submission response document has been prepared by means of duplicating the individual submission received and inserting Note: response clauses where relevant.

1.1 GENERAL COMMENTS

The DPI&F reviewed the EIS in relation to the project's potential impacts on Queensland's primary industries and its statutory responsibility under the Fisheries Act 1994 to manage and protect fisheries resources and fish habitats.

The EIS has significantly underestimated the importance of the port to the live cattle export trade and its potential growth. The data used to estimate air quality is probably correct for the specific year but data collected between 1989/90 to 2005/06 indicates that live cattle numbers exported show a high variability depending upon price and number of ship movements. The number of cattle exported from Townsville has varied from about 3,000 up to 122,000 in 2002. In that year, the number of ship movements is also variable depending upon the ship capacity. The live cattle market is an important market for north Queensland beef and should not be put at risk.

The EIS should also consider the potential expansion of the port and any impacts this may have on noise, odour and other nuisances to residential areas.

The EIS has not adequately described, mapped or evaluated the fish habitats and resources within the development footprint. The EIS appears to focus on the potential impacts of the development and its construction on areas outside the footprint. The EIS states that the development area contains seagrass meadows and a rich invertebrate benthos that would both contribute significantly to fisheries productivity. This has recently been confirmed by DPI&F staff conducting monitoring in the Townsville area. While the DPI&F accepts that the habitats within the proposed footprint have been modified or have evolved due to the construction of the port breakwaters, the adjacent inshore areas have productive seagrass meadows. Consequently, the DPI&F believes that the fish habitat losses and negative impacts from the development should be clearly characterised and costed in the EIS. In addition, the affected stakeholders, who are the recreational, commercial and Indigenous fishers of Townsville, should be provided with mitigation and offsets for any losses to fish habitats supporting already fully exploited resources. These mitigation options offsets should be discussed with DPI&F prior to any conditions being set or operational works being undertaken.

RESPONSE

The comments by DPIF on the live cattle export trade are noted. The Expert Reports by (a) Air Noise Environment (ANE) (Appendix A1 in Volume 2) now includes records of the live cattle exports from 1997/1998 to 2007/2008. The figures in table 2.1 of the ANE report show variability in the number of cattle shipped per year and the number of ships in any one year. The trend appears to be a declining number over the last five years.

Enguiries were made of the cattle industry and it was found that increasingly cattle exports are being channelled through Darwin due to the shorter sea voyage to South East Asia.

Notwithstanding this change, the odour effects of cattle exports have been an amenity impact by city of the Port for ten years. In that time there have been no registered complaints by residents in the precinct. This strongly suggests that the odour is tolerated by residents even though it is readily discernable even from residential areas in the city itself. The Townsville Ocean Terminal development has the added advantage that it will have a Port Protection Agreement which will include specific building codes to allow residents to isolate themselves from odour and other amenity impacts when they occur, as well as covenants preventing vexatious complaints to the Port.





To the degree that the EIS did not adequately address the expansion of the Port, this has been addressed again in further studies done by ANE which can be found at Appendices A1-A5 in Volume 2.

(b) The DPIF comments in relation to the need for adequate mapping and evaluation of fish habitats, resources and sea grasses is acknowledged. The seagrass mapped is relatively sparse with seagrass overall covering 30.5% of the site. Seagrass densities were low in the project site. All seagrass will be removed with the draining and excavation work on the site.

Preliminary discussions were held with DPIF on offsets. It was agreed that further discussion will be required once further detailed seagrass mapping is completed in the full growth season in November. A meeting will be arranged for January 2009.

The Draft Nature Conservation Report at Appendix A14 in Volume 2 has addressed these issues in greater detail. Mitigation and offsets have been discussed with DPIF and it is acknowledged that settlement of these matters will be a specific requirement of DPIF as part of the application under the Fisheries Act.

- 1.2 SECTION 3.4.1 CONSTRUCTION METHODOLOGY AND SEQUENCING
- 1.2.1 Preferred Construction Method

Step 1 - Access Haul Road and Hardstand Area

The EIS indicates that the development area contains considerable areas of deep, unconsolidated mud or 'ooze'. The proposed method of constructing the access haul road is likely to cause the displacement of this material and result in considerable increases in turbidity which may affect the adjacent seagrass meadows. Alternative or modified methods of construction should be considered.

Step 2 - Perimeter breakwater construction

The construction of the perimeter breakwater as proposed is likely to cause the same problems as described above in Step I. Alternative or modified construction methods should be considered.

Step 3 - Temporary bunds construction

Again, the proposed construction methodology is likely to cause increases in turbidity and alternative or modified construction methods should be considered.

Step 5 - Sheet Piling of Future Land Area

Sheet piling and full enclosure of the development site is likely to be the best method to construct the land area to minimise impacts on adjacent sensitive habitats. The construction of the enclosure constitutes a Waterway Barrier Works under the Fisheries Act 1994 and an operational works approval from the DPI&F will be required.

The completion of the sheet piling and full enclosure of the development site should be timed to coincide with a very low neap tide to minimise the amount of fish fauna and marine mammals trapped within the enclosed area. Enclosure on a low tide will also reduce the amount of water that has to be pumped out of the enclosed area and treated. An EMP should be developed to address the maintenance of WQ necessary for fish survival and for the salvage of fish and marine mammals trapped within the enclosed area. An EMP is likely to be a condition of any Waterway Barrier Works approval granted.





The DPI&F has published Fish Salvage Guidelines (available at http://www2.dpi.qld.gov.au/fishweb/17944.html) which may assist in developing the EMP. A General Fisheries Permit may be required from the DPI&F for the use of some types of nets and other fishing equipment.

Temporary Works

The EIS states that fill and rock material delivery may involve barging from the junction of Boundary Street and Benwell Road to the project site and temporary stockpiling of fill material at the Riverside Marine site. A detailed description of this location and its environmental values is lacking, including if the site is subject to tidal influence (contain fish habitats and marine plants). If tidal, the area of disturbance proposed at this location, alternative stockpiling sites above tidal influence, and whether additional dredging is required along this access route. Plate 3.4.6 - 'Proposed outer entry dredge channel area' indicates that an additional 67 009 m² area outside the future development area will be dredged to facilitate barge access to import fill.

Sustainable Engineering Solutions

Details are lacking on if and how the fill will be tested for contaminants and if there is potential for these contaminants to dissipate over time into the marine environment.

RESPONSE

The comments by DPIF have been acknowledged and further analysis has been undertaken to further detail the construction method to take into account the issues raised. These are covered in the report by Flanagan Consulting Group on Water Quality Management during Construction at Appendix A11 in Volume 2.

The report considers the effects of the works and in Section 5 sets out a methodology to deal with these concerns.

DPIF's comments in relation to the use of sheet piling are acknowledged and some adjustments to the methodology have been made particularly in the area of the Ocean Terminal itself.

The timing of completion of the sheet piling/enclosure in relation to tides is noted and this will be further addressed in the final EMP. It is acknowledged that an approval is required from DPIF and that the revised Environmental Management Plan (Appendix A9 in Volume 2) will require further input and discussion with DPIF as part of this approval process.

DPIF comments in relation to the temporary works required for the barging option for material haulage have been considered in the haulage section of the Flanagan Consulting Group report, Review of Construction Issues (Section 5) at Appendix A8 in Volume 2.

As an alternative, a barge option to carry trucks across Ross Creek has been considered by the project Proponent, which would effectively avoid any concerns about the impact of a temporary bridge structure on creek access.

This alternative to the temporary bridge across Ross Creek involves barging the trucks back and forth across the creek to the site. Discussions with the Port and the Regional Harbour Master have confirmed that this option is possible and two barge landing ramp locations have been identified with them and design work has been undertaken to show that the options are viable. The barging option has an advantage over the bridge in that noise on the Strand and Sir Leslie Thiess Drive is minimised.

The assessment in this report of haulage options concludes that the preferred route including barging across Ross Creek is supported.



1.3 SECTION 3.5 - OPERATIONS

1.3.1 Maintenance Dredging

The long-term dredge spoil disposal is a critical aspect of the operation of the proposed development and should be addressed and be a critical part of the EIS process, not after it. Annual maintenance dredging of 15 000 m³ is a significant amount of dredge spoil to dispose and further detailed discussion and evaluation of the various spoil disposal site options should be undertaken to ensure that a suitable location for its disposal can be found. If disposal at sea or within a port reclamation area is ruled out as a long-term option, then arrangements need to be made during the EIS process for a permanent long-term, land-based dewatering site within the development site or port.

Detailed discussion is required on potential impacts on benthic communities for sea based disposal sites, including disposal frequency, area of disturbance, adjacent impacts, and cumulative impacts of additional spoil to be added to current Port spoil disposal. The EIS should identify future management options, responsibilities and testing procedures for any dredge management plans.

RESPONSE

DPIF comments in relation to maintenance dredging and the disposal of material have been considered. A report on these issues can be found at Appendix A12 in Volume 2 by Flanagan Consulting Group on Potential Operational Dredging Impacts on Water Quality.

The report identifies that the dredge spoil quantity from the Breakwater Cove facility is predicted to be 5000m³ per annum which is factored up by 50% to 7500m³ for conservatism.

The method of extraction and the disposal are discussed. Although there are a few options, a self sufficient option is explored and detailed as the likely option if TPA co-operation is not possible.

- 1.4 SECTION 4.3 TRAFFIC AND TRANSPORT
- 1.4.1 Section 4.3.1.3 Potential Impacts and Mitigation Measures Marine Transport

The EIS does not indicate that adequate consultation has occurred with upstream users of Ross Creek that will be impacted by the temporary bridge. Are the proposed opening times sufficient so as to not negatively impact on recreational boaters and other users?

RESPONSE

DPIF comments about consultation with the users of Ross Creek are acknowledged. For the material haulage option 1, being the use of the temporary bridge, the management plan for opening the bridge was reconsidered following discussions with the Board of the TMBYC and after considering their submissions.

The change involves an alteration in the philosophy of priority. The revised approach is to give boat users on Ross Creek priority and to open the bridge for marine traffic on demand.

As an alternative, a barge option to carry trucks across Ross Creek has been considered by the project Proponent, which would effectively avoid any concerns about the impact of a temporary bridge structure on creek access.





This alternative to the temporary bridge across Ross Creek involves barging the trucks back and forth across the creek to the site. Discussions with the Port and the Regional Harbour Master have confirmed that this option is possible and two barge landing ramp locations have been identified with them and design work has been undertaken to show that the options are viable. The barging option has an advantage over the bridge in that noise on the Strand and Sir Leslie Thiess Drive is minimised.

This is covered in greater detail including a multi criteria analysis of the haulage options in the Flanagan Consulting Group reports at Appendices A7 and A8 in Volume 2.

- 1.5 SECTION 4.4.2.3 STORMWATER QUALITY IMPROVEMENT DEVICES
- 1.5.1 Rainwater Tanks

The EIS states that Townsville City Council (TCC) has applied for an exemption from the Queensland Government's initiative that requires new homes to have a rainwater tank installed, therefore rainwater tanks may not be required within the Breakwater Cove development. Modelling Results and Conclusions states that introduction of rainwater tanks within Option B (Stormwater discharge) will further increase pollutant reduction efficiency. While rainwater tanks may not be mandatory, their addition would be best practice for increasing the quality of stormwater entering Cleveland Bay from the development site, and should be considered as part of the project's commitment to ecologically sustainable development. This situation would need to be assessed in relation to inclusion of first flush diversion mechanisms, especially in relation to air quality issues relating to the port.

RESPONSE

DPIF comments on rainwater tanks are noted. The Proponent envisages a best practice approach to the development which would include discussions with the TCC to incorporate rainwater tanks for all residences as part of the ESD principles.

- 1.6 SECTION 4.7.2.1 WATER QUALITY
- 1.6.1 Algal Blooms

The EIS states that algal blooms will be avoided by adequate flushing. If the worst case scenario eventuates and algal blooms become an issue within the canal system, the identification and description of response measures that will be put in place to rectify the problem, including discussion on minimising the risk of fish kills and long-term negative impacts on the fisheries resources and habitats within the canal system, should be documented.

RESPONSE

Refer to the Hyder Consulting Draft Water Quality Monitoring Program Report at Appendix A13 in Volume 2.

- 1.7 SECTION 4.7.2.2 COASTAL PROCESSES
- 1.7.1 Strand Beaches

The investigation into impacts on local wave climate has found that changes to accretion and erosion patterns along the Strand beaches will occur as a result of the development resulting in a realignment of local beaches. Discussion should be provided on these findings with reference to potential impacts on the nearby and adjacent seagrass meadows.





RESPONSE

DPIF comments on the realignment of the Strand beaches are noted. This issue has been readdressed and further explanation provided in the Expert Report by Coastal Engineering Solutions at Appendix A24 in Volume 2.

The realignment of the beach is calculated to be 1 metre and over the length of the beach it is submitted that to the public this will not be discernable. It is considered that the accretion and erosion is relatively insignificant and is unlikely to have any affect on the nearby seagrass meadows. When considered together with the TCC monitoring and beach replenishment programmes further mitigation is not considered necessary.

Performance of Breakwaters and Entrance Channel

1.7.2 Design Methodology

The design of the breakwaters, internal revetments and all other aquatic infrastructure associated with this development should include consideration and implementation of the design principles outlined in "Fish Habitat Guideline 06; Fisheries Guidelines for Fish Friendly Structures; available at the following link http://www2.dpi.qld.gov.au/fishweb/18558.html. Proponents intending to develop or maintain aquatic infrastructure should use these guidelines to help ensure that impacts on fish and fish habitats are minimised, and that opportunities for the enhancement of structures as fish habitat are maximised. The implementation of these guidelines within the design of the development is viewed by the DPI&F as mitigating the negative impacts of the development on fish habitats and will substantially reduce the amount of environmental offsets being sought by the DPI&F for fish habitat losses.

RESPONSE

DPIF comments on the design of the breakwaters, internal revetments, etc. are acknowledged including the reference to Fish Habitat Guideline 06. The Proponent is keen to design the new structures to achieve the very best outcome and it will liaise with DPIF to this end during the detailed design stage prior to lodging relevant operational works applications.

- 1.8 SECTION 4.11.1.3 AQUATIC BIOLOGY AND FISHERIES SEAGRASS
- 1.8.1 Seagrass

The DPI&F does not believe that the seagrass control sites established for the EIS are true control sites for a BACI designed monitoring program, as the species, biomass, substrate etc. differ markedly from the development site and the near shore areas likely to be impacted by the development. The DPI&F believes that the aspect of the development likely to have the greatest impact on the seagrass, other than total loss within the development footprint, is the capital and annual maintenance dredging. A much simpler seagrass monitoring program could and should be developed and submitted to DPI&F for review to help refine the dredging program, particularly in relation to the timing of dredging.

The EIS does not state when the seagrass sampling was undertaken and on how many occasions. This is particularly important as a number of the species are ephemeral and abundance and biomass can vary significantly throughout the year and from year to year.

While the EIS describes the seagrass found at the various sampling sites, it does not adequately map and describe the extent and status of seagrass and macro-algae within the development site. A detailed map at an appropriate scale, showing the tidal lands and seagrass communities and other marine plants (i.e: mangroves, algal beds) within, and directly adjacent to the project site is required for the DPI&F's regulatory assessment of the development (operational works approval to remove marine plants). This map should include an overlay of the disturbance area to enable accurate calculation of





the loss of fisheries resources resulting from the development and include any marine plants to be disturbed as a result of the proposed temporary bridge and landings.

RESPONSE

DPIF comments in relation to the matter of seagrass impacts and monitoring are acknowledged. The Proponent welcomes the suggestion of a simpler approach to seagrass monitoring and this will form part of the applications to DPIF.

A new more detailed seagrass mapping exercise has been completed and this can be found at Appendix A14 in Volume 2.

This document together with further work to be agreed with DPIF will form the basis of the submission to DPIF for the approvals under the Fisheries Act and the discussions on offsets.

1.9 SECTION 4.11.2.2 AQUATIC ECOLOGY AND FISHERIES

1.9.1 Seagrass / Marine Plants

A more detailed assessment of the seagrass communities within and adjacent to the project site is required. This will involve a map of the distribution and species present. The study should also indicate if there is any evidence of utilization of the area by endangered species. Details of mitigation and offsets for the loss of fish habitats and fisheries productivity should be provided.

RESPONSE

Noted and reference is made to the Draft Nature Conservation Report at Appendix A14 in Volume 2 which includes detailed seagrass mapping.

The seagrass mapped is relatively sparse with seagrass overall covering 30.5% of the site. Seagrass densities were low in the project site. All seagrass will be removed with the draining and excavation work on the site.

Preliminary discussions were held with DPIF on offsets. It was agreed that further discussion will be required once further detailed seagrass mapping is completed in the full growth season in November. A meeting will be arranged for January 2009.

1.9.2 Fish and Fisheries

This section acknowledges that the Port Western Breakwater is a popular location for land-based recreational fishing. The study should address and describe mitigation to be provided to the local recreational fishing community for loss of access to this easily accessible, popular fishing area for the duration of the construction period of this project.

RESPONSE

The temporary loss of the amenity to the fishing community is acknowledged. During the construction phase there is no way to mitigate this due to safety issues. It is considered that the improved fishing facilities upon completion will make up for the temporary loss of this amenity. Refer to Appendix A14 in Volume 2 - Draft Nature Conservation Report.





1.9.3 Measures

The seagrass communities and fisheries resources contained within impacted areas (within and adjacent to the project site) are important fisheries resources that contribute towards fisheries productivity. Suitable mitigation or offset measures will be required by the Department of Primary Industries and Fisheries to adequately compensate for the loss of fisheries resources associated with this development. A suitable offset or mitigation program should be negotiated with DPI&F and described within the EIS process.

The DPI&F does not support the addition of iron to stimulate seagrass growth as iron can also stimulate algal blooms such as the toxic Lyngbya sp. outbreaks which may not have a beneficial outcome on water quality and aquatic ecology. Efforts should be focused on removing the cause of the seagrass decline.

RESPONSE

The Proponent acknowledges DPIF comments in relation to offset and mitigation programmes.

Discussions have been held with DPIF on this subject, but it is acknowledged that these matters will be addressed in detail with DPIF during the approvals process under the Fisheries Act application.

1.9.4 Project Site

This section briefly outlines measures for fish and marine mammal rescue. However, as outlined in earlier comments; an Environmental Management Plan needs to be developed. Elements should include having suitably qualified people on site to perform and monitor the rescue; having the correct gear & equipment to perform the rescue, having adequate numbers of trained people to implement the rescue; and mechanisms to maintain water quality. Recent experience indicates that many thousands of fish may become trapped within these types of enclosures and that rescue efforts may take several days.

RESPONSE

DPIF comments about an EMP are noted. A revised EMP has been developed and can be referenced at Appendix A9 in Volume 2. It is envisaged that this will form the basis for discussions leading to an approved EMP before construction work begins.

1.9.5 Seagrass Bed Monitoring Program

The DPI&F questions the value of undertaking a seagrass monitoring program specifically for the construction of the project, other than the capital dredging, as it would be very difficult to statistically determine if changes in seagrass species distribution and density could be attributed to the construction program, particularly given the likely lag time between specific construction activities that may be causing negative impacts and any decline in seagrass. If the project gains approval, construction methods employed should minimise turbidity increases, particularly for constructing the bunds enclosing the development area.

A seagrass monitoring program should be established for the capital dredging of the navigation channel and the maintenance dredging of the navigation channel and Breakwater Cove canals. This is because dredging activities will be an ongoing and annual activity with the potential to continually impact on seagrass meadows. A monitoring program may be useful in determining the most appropriate dredging techniques and timing of dredging operations, to minimise disturbances to adjacent seagrass meadows.





The DPI&F believes that the proponent should explore the possibility of incorporating monitoring with Townsville Port Authority's monitoring regime, to reduce overlap of data collection and monitoring costs.

Seagrass surveys within the development site after construction are not warranted, as the canals will be subject to regular maintenance dredging and the surveys will serve no purpose other than to recognise the presence of seagrass.

RESPONSE

DPIF questions over the value of the seagrass monitoring programme are acknowledged. This will be addressed as part of the CMP to be discussed with DPIF and approved prior to the start of construction.

1.9.6 Intertidal Monitoring.

Provide details of the proposed inter-tidal monitoring and whether it will *vary* significantly from the baseline monitoring.

RESPONSE

Refer to Appendix A13 in Volume 2 - Draft Water Quality Monitoring Program Report.

1.10 TEMPORARY BRIDGE (ROSS CREEK) PRELIMINARY SCOPING REPORT - (APPENDIX 6)

The Scoping Report states that a temporary bridge is the preferred option. Details should be provided on the construction methodology, including bunding requirements and whether an operational works approval for construction of a waterway barrier works will be required.

A detailed map at an appropriate scale, showing the tidal lands and seagrass communities and other protected marine plants (i.e: mangroves, algal beds) within, and directly adjacent to the temporary bridge and landings site should be provided.

RESPONSE

The Proponent notes DPIF comments and confirms that a temporary bridge will be the subject of an operational works approval if this option were to be selected. It is however of note that another haulage option has been investigated and will address the detailed issues raised.

As an alternative, a barge option to carry trucks across Ross Creek has been considered by the project Proponent, which would effectively avoid any concerns about the impact of a temporary bridge structure on creek access.

This alternative to the temporary bridge across Ross Creek involves barging the trucks back and forth across the creek to the site. Discussions with the Port and the Regional Harbour Master have confirmed that this option is possible and two barge landing ramp locations have been identified with them and design work has been undertaken to show that the options are viable. The barging option has an advantage over the bridge in that noise on the Strand and Sir Leslie Thiess Drive is minimised.

1.11 ENVIRONMENTAL MANAGEMENT PLAN (SECTION 5)

A Scientific Advisory Panel should be established to supervise the implementation and review of the Construction Environmental Management Plan (CEMP). Such a panel was employed for the Strand redevelopment project and enabled rapid and coordinated direction on environmental management matters.





A CEMP needs to be developed to minimise the numbers of fish and marine mammals entrapped within the sheet piled development area and to address their rescue and release. Elements of the CEMP should include (but not be limited to): ensuring that the enclosure of the sheet piled area coincides with a very low tide to reduce the volume of water and numbers of motile marine organisms entrapped; water quality in the enclosed area is maintained until fish and marine mammals are rescued, and adequate numbers of suitably trained/experienced staff are on hand to undertake the salvage operation.

Many items in the CEMP Element 7 (Flora and Fauna) lack sufficient detail and prescription to be useful as a management and mitigation tool. For example, "Dredging shall not occur during strong SE winds or strong wind-driven currents". How strong? 20kmlhr winds? 2mis currents? Clear parameters need to be defined in the EMP and clear direction given on how outcomes are to be achieved.

RESPONSE

A revised EMP has been prepared and it is submitted that this will be used as the basis for discussions to finalise an approved plan prior to the start of construction.

The DPIF comments in relation to the EMP are noted.

1.11.1 Monitoring

The events requiring monitoring should be defined.

The sampling of microalgae and other organisms in the seagrass meadows is not considered to be necessary within a seagrass monitoring program.

RESPONSE

Refer Appendix A14 in Volume 2 - Draft Nature Conservation Report.

1.11.2 Performance Indicators

The performance indicators for CEMP element 7 need further refinement. For example, will dredging cease immediately once a turbidity reading exceeds 10% above that of the control sites? Experience has indicated that a 10% difference is likely to occur regularly, and if adopted as a trigger, would result in significant and possibly unnecessary disruption to dredging schedules.

During the construction phase, it will be near impossible to be able to determine statistically if a 20% decline in seagrass downstream of the dredging site is immediately attributable to the dredging or due to seasonal or climatic variation. Instead, emphasis should be placed on ensuring the efficient and correct operation of the suction dredge during periods of neap tides.

RESPONSE

DPIF comments in relation to performance indicators for CEMP element 7 are noted and have been considered in the draft EMP. The practicality of the DPIF approach is welcomed.

1.11.3 Corrective Actions

The DPI&F does not support the addition of iron to sediments as an acceptable corrective action for seagrass losses over 50%.

RESPONSE

Noted and this will be addressed.

