

Submission on the environmental impact statement (EIS)—Townsville Port Expansion Project

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Section of EIS	Describe the issue	Suggested solution
B6 and B24, and Appendices K1, K2, K4, L1, and W1	The EIS identifies Cleveland Bay as having particular significance for the complex mosaic of ecosystems present, the extent of coral reefs and sea grass communities, and the presence of threatened and migratory species, but it does not integrate these and other identified values and assess this cumulative significance in the overall context of the Great Barrier Reef World Heritage Area, nor within the Lucinda-Mackay Coast Marine Bioregion.	The proponent has to determine the ecological significance of Cleveland Bay within the context of the World Heritage Area and of its marine bioregion before it can assess the likely significance of the impacts of the project and subsequent operations on Matters of National Environmental Significance (MNES).
B6 and B24, and Appendices K2 and L1	The habitats of Cleveland Bay complement the habitats of the adjoining RAMSAR site, providing feeding grounds for turtles and dugongs. The RAMSAR information sheet for the declared wetland particularly says that the intertidal and sub-tidal seagrass meadows of the site, together with those at nearby Cleveland Bay outside the site, provide an important food resource for dugongs	Any impact on these species within Cleveland Bay will have a corresponding impact on the value of the RAMSAR site. Marine fauna survey for the EIS is totally inadequate. Population structure, genetics and population ecology need to be investigated to understand the significance of potential impacts from the project and ongoing activities. For example

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	and green turtles.”	seasonal or life cycle use of resources or reliance on particular areas of the bay, or the adjacent RAMSAR site is not known, nor are food web relationships, especially with regards to critical seasonal constraints, and the bioaccumulation of toxic compounds and elements.
B6	<p>The GBRMP has a zoning system that identifies the conservation values and level of protection of particular areas. The project area is surrounded by parts of the MP that have significant conservation values. They include Marine National Parks (part of a representative system of reserves within the larger MP) in bays on the eastern and northern side of Magnetic Island (MI), a Habitat Protection Area forming a broad band around SE and NE parts of MI, and large Conservation Park areas to the west (between MI and Pallarenda) and east (the SE part of Cleveland Bay). All these areas will be significantly affected by increased turbidity and contamination, including by heavy metals and coal dust. In the case of the areas to the west this increase will be immediate and sustained to a greater or lesser extent, while in the east the impact will only be clear over time.</p> <p>The EIS acknowledges these impacts when it suits a pro-expansion argument. For example “(nickel) data from sites clearly affected by dredging were removed from the dataset (i.e. Radical Bay....”.</p>	<p>The Port has not adequately addressed the current impacts from maintenance dredging and shipping activities. The proposed management strategies should be implemented now and their effectiveness monitored over a number of years. Only when effective reductions in impact are demonstrated and maintained should any increase in dredging and shipping be considered.</p>
B5	<p>The top 1m at least of sediments will be contaminated to some degree by heavy metals, antifouling compounds and other contaminants. Historic mercury deposits have been found at a depth of about 2m (Dr G Brunskill, pers comm.). Resuspension by dredging activity and dumping will inevitably lead to the further spread of these contaminants, particularly into nearby protected zones and vulnerable habitats.</p>	<p>Further information on the impact of sustained low levels of contamination on marine biota is required. The evidence so far available suggests that very low levels, particularly in combination with other stresses, can lead to long term environmental declines.</p>
B5	<p>The sediment analyses do not include particulate nutrients. If a substantial proportion of the nutrients is in particulate form and becomes bioavailable it will be released during resuspension, chronically increasing nutrient levels in what should be relatively</p>	<p>Include particulate nutrients in the more detailed sediment sampling required.</p>

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	low nutrient waters. Particulate nutrients are a key factor supporting seaweed growth on reefs and have been implicated with red and blue tides caused by algal blooms.	
Appendix F7	There is a large proportion of sediments that is classified as 'potential acid sulfate soil' and will become acid when it oxidises. Data on the extent of acid sulfate soils, and its fate when dumped and resuspended offshore, is inadequate to assess potential impacts.	Better data on the amount of these soils and their response to oxygenated seawater, during dumping and larger resuspension events, is required.
Appendix E4, App H1, section 5.4	Marine dumping of dredge spoil in the World Heritage Area is an inappropriate use and will lead to ongoing water quality problems in the bay and nearby areas, particularly of sea grass beds and coral reefs. It is ironic that hundreds of millions of dollars have been spent reducing input of sediments and suspended solids from terrestrial catchments and the port is proposing to intentionally dump contaminated sediments and suspended solids straight into the Marine Park lagoon.	A comprehensive analysis of potential terrestrial disposal sites needs to be undertaken to identify the true costs of proper disposal. Users of the port should pay the true cost of maintenance and use. The environment should not be made to carry the cost.
App H1 and C 2.1	The modelling used to estimate the impact of dredging was not done in accordance with the guidelines of the Great Barrier Reef Marine Park Authority, does not meet world best practice, and is untested. The real impact of the proposed dredging on the seagrasses, corals, dugongs, dolphins, turtles and other marine fauna cannot be determined with any confidence.	The methodology used needs to be peer reviewed by an independent expert panel and a more accurate and reliable estimate of potential impacts made.
B5, B23, B24, Appendix W1 and other sections.	The sustained impact of ongoing maintenance dredging and of increased vessel use is not adequately addressed.	Past and ongoing impacts of current activities need to be properly assessed, and the proposed impacts presented as cumulative to these.
Appendix H1	The EIS acknowledges "It is difficult to quantify the rate of natural resuspension of material from the existing DMPA due to uncertainties regarding the quality of historical bathymetric data and the nature and degree of consolidation of the sediment after placement. The long term change in bathymetry due to maintenance dredging appears to be minimal, and there is	Monitoring of current sea dumping at the DMPA is clearly inadequate and the fate of the sediment is unknown. This needs to be resolved before a huge increase in quantities dumped here can be considered. The studies in the EIS are inadequate for this purpose and need to be re-done with expert guidance. The evidence available (Sinclair Knight Merz

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	evidence that the capital dredging material placed in 1993 has been smoothed out.” This is a clear indication that sediment disposed of at the site (other than perhaps the coarsest material) has been re-mobilised and moved to other parts of the bay and elsewhere. Most of the dumped material appears most likely to remain in suspension and drift with the currents before it has a chance to settle on the bottom at the site.	(1995) and ETS Worldwide tracer investigations) indicates that it spreads in all directions with a significant part hitting the north-eastern shores of Magnetic Island.
C 2.1	The monitoring program proposed to manage impacts on seagrass and coral communities delivers no certainty for the environment. This section proposes “an iterative approach to setting and improving water quality trigger values with input from the Expert Advisory Panel” and trigger levels that will be established during the dredging program “for ecological assets such as seagrass and corals that are realistic for protection but avoid frequent and unnecessary stoppages by the dredge which will ensure the overall duration of impact is reduced.”	This is entirely unconvincing and expert review of this critical aspect of the proposed project is essential. Any monitoring program must include the precautionary principle, and put the health of “ecological assets such as seagrass and corals” above the convenience of the port. Monitoring sites need to at least encompass the range of coral and seagrass communities present, and all coastal aspects of the island (ie all sides). Control sites will need to be carefully selected as, if the tracer experiments are any guide, areas not impacted by the dredging are unlikely to be present in the bay.
B13	The economic impact of the project on the tourism industry of Magnetic Island and the Townsville region is not addressed, nor is the social impact on the community and coast-based lifestyles.	The EIS needs to assess potential benefits and costs for a range of impact scenarios. For example winter dredging will be during peak tourist season and is likely to have a major impact on tourism. The proposal needs to be assessed as part of an accumulating development impact that is threatening a \$6 billion tourist industry that supports 50,000 sustainable jobs.
B 18	Economic justification for the proposed expansion is weak and speculative. No basis for the forecast rapidly increasing vessel numbers is provided. The increase is almost entirely in “dry bulk”. This largely includes the use of the port for coal export and other minerals but yet does not consider the potential impact of these uses on the environments of the bay or on the WHA. Other larger ports are well placed to handle the proposed increased traffic and the necessity for this project is not established despite the obvious and well-documented risks.	Physical and biotic processes readily spread coal dust, and presumably mineral dust, over very wide areas of the reef and its lagoon. These consequential and broader impacts should also be addressed by the EIS, including their significance and the means of avoiding them. While the economic benefits of greater port activity are highlighted, so do its costs also need to be clearly identified. On the information provided in the EIS it can be concluded that the port is an unsustainable port in an unsuitable


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		location, subsidised by environmental degradation.
B 6	The EIS uses data from a survey done in 2000 to assess whether non-native species have been introduced by port activities. This data is now 13 years old and an insufficient basis for this assessment. This old survey identifies potential non-indigenous species but dismisses them as inconsequential in terms of hazard to local species and environments. Their presence demonstrates that current policies to prevent incursions by introduced species are probably inadequate. That ballast waters are currently discharged near Magnetic Island and in the port demonstrates a cavalier attitude to biosecurity.	The Port Authority needs to implement the proposed mitigation strategies now to prevent further introductions. The port needs to demonstrate that these strategies work before an increase in vessel size and activity is proposed.
B 6	Permanent adverse residual impacts based on the impacts of ongoing maintenance and port activities are not considered in determining offsets for the project. This is despite the EIS acknowledging “ Potential impacts to marine species associated with increased marine pollution and vessel movements in the port area during the operational phase” and “once the new port facilities are operational, vessel traffic, maintenance dredging requirements and potentially pollutant loads will increase, leading to ongoing chronic impacts to the marine ecological values in the vicinity of the port area”. In this context the port area includes the channel, with Magnetic Island and the associated marine protected areas in the near vicinity. Wind and tidal movements will shift silt and contaminants around the bay.	Offsets need to reflect the scale, extent and duration of impacts. A use category over an area the port does not control but will be deleteriously affected by the proposed development is not an appropriate offset. It can be argued that the impacts are so great that offsets would need to be of the scale of the Reef Rescue package.
B24 and Appendix W1	The ecology of the GBRWHA is known to be under severe stress and preventable impacts must be avoided. The EIS acknowledges the current stressed conditions but attempts to dilute the impact of ongoing and proposed increased stresses from port activities by grouping it with the effects of periodic flooding from the Burdekin River. The ecosystems of the bay can recover from periodic and short-lived stresses from flooding and	The ecosystems are currently under stress from climatic and flooding events, and large dredging events, over the last few years. They are unlikely to be able to cope with the stresses of a major dredging project for some time. A period of extended recovery under suitable climatic conditions is needed before the marine ecosystems are subject to further stresses. In fact it is not yet clear whether they will recover.

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	bleaching, but chronic ongoing stresses, particularly caused by sedimentation and low light due to extended and regularly repeated periods of turbidity, will do permanent damage.	The priority for the Port Authority should be the reduction of impacts from its current activities, not increasing them.
B 6	Cleveland Bay is consistently characterised in the EIS as being naturally turbid, due largely to the contribution of sediment and silt from the Burdekin River. This contribution is unquantified, but the EIS implies that it somehow lessens the impact of the proposed dredging as the ecosystems are used to high turbidity and low light. The evidence does not support this proposition. Coral reef temporal patterns presented in the EIS only cover the period from 1989 (Magnetic Island) and 1993 (Middle Reef). Most sediment from rivers is trapped inshore by mangroves and in sheltered bays. Historically Cleveland Bay was naturally clear and supported more abundant coral cover and larger numbers of dugong. Cleveland Bay is more turbid than Halifax Bay to the north and Bowling Green bay to the south (Gregg Brunskill pers comm.).	The EIS needs to review the long-term impact of dredging activities. For example the Theo Brown 1972 paper titled "Silt Pollution, the destruction of Magnetic Islands reefs" systematically refutes the Ports long held insistence that natural factors overwhelm the impact of dredging. Control sites need to be well beyond the possible impact zone of sediments released by dredging, sea dumping and vessel movements. Similar impacts are likely to have affected the shallower sea grass areas which have a low tolerance to low light levels.
B24 and Appendix W1	The combined effect of the proposed additional impacts and their compounding interaction with an already extremely stressed environment is not properly addressed by the EIS.	Potential impacts need to be assessed in the context of a stressed ecosystem rather than dismissing it as "disturbed" and naturally turbid. The major role of past and ongoing port activities in causing this disturbance and turbidity needs to be acknowledged and clearly identified. The model for assessing impacts needs to be modified to ensure that synergistic impacts, such as the simultaneous effect of turbidity, sedimentation, nutrients and heavy metals, is properly determined.
B6, B24, Appendix K2	The benthic communities are poorly known and the mapping is largely based on modelling using acoustic mapping and video sampling. The acoustic mapping was limited to the proposed development area and its immediate surrounds, and does not provide a basis for assessing the nature, condition and significance of these habitats in the context of the habitat types of the bay. The significance of the benthic communities and the	The ecological significance of the entire bay ecosystem complex needs to be properly determined and considered, especially in the context of the more heavily polluted areas of this marine bioregion around Mackay, Bowling Green Bay and Lucinda. The impact of the project on these ecosystems in the context of the bay cannot be determined without more comprehensive survey, mapping and characterization.

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	<p>potential impacts of the project on them are consistently downplayed in the EIS. For example not only are they an important part of a diverse mosaic of ecosystems, evidence in the EIS indicates they also provide food resources for four of the turtles recorded in the bay. The species are only identified to the level of genera, so there is no assessment of species assemblages, poorly known species, endemic species or new species. The EIS clearly states “There are too few data to quantify tolerance limits and the zone of likely impacts for these (benthic invertebrate) species.”</p>	
B6, Appendix K2	<p>The Townsville region is a hotspot for dugong and turtle strandings.</p>	<p>The significance of the very high numbers of strandings, compared to the rest of the state, needs to be properly interpreted. For example does it indicate that Cleveland Bay is a refuge for dugong during times of extreme food shortage? What is the role of benthic communities and deep sea grasses for supplementary feeding in this context? Seasonality is critical in assessing sea grass beds and their use, especially the deeper ones, so sampling needs to be spread across seasons.</p>
B6, B24 and K2	<p>Ongoing studies demonstrate that the Ross Creek and Ross River mouths, together with the Platypus and Sea channels, represent important foraging area for both near-shore dolphin species but this is downplayed in the EIS.</p>	<p>The ecology of these species in the bay should be properly determined so that the reasons for their preference for these areas are understood. The evidence suggests that the bay is regularly used and may be critical habitat on the north-eastern coast for this population. The impact of current contaminants in the port environs on these species needs to be determined before more pollutants are liberated by capital dredging.</p>
B6	<p>The EIS proposes that despite an increase in vessel traffic resulting from the proposal it “is not expected to result in a commensurate increase in ships at anchor” and hence ship anchorage areas are not identified”. This seems nonsensical given the number of ships that already anchor off Townsville.</p>	<p>Potential anchorage sites need to be identified and potential impacts, and the means of managing them, determined.</p>

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All sections	The EIS as a whole is long and exceedingly complex. The proposed management strategies are based on a number of questionable assumptions and include a great deal of ambiguity and flexibility. It is therefore difficult for the layperson to confidently assess the potential impacts of the proposed expansion. In addition the EIS does not demonstrate conclusively that the numerous and significant negative impacts from the project can be successfully mitigated.	Given the technical and scientific complexity of the EIS, the many unknowns, and the potential for substantial and increasing damage to the World Heritage Area, the whole EIS should be reviewed by a panel of independent scientific experts.

Signature:



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