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Dear Melinda

**Re: Proposed expansion of the Port of Townsville**

North Queensland Conservation Council (NQCC), established in 1974, works to protect the environment of North Queensland through programs of education, including responding to requests for comment on proposed development and legislation. Based in Townsville it is particularly pleased (and able) to comment on the proposed expansion, of the Port of Townsville.

On the release of the Environmental Impact Statement (EIS), the *Townsville Bulletin* published an inaccurate article suggesting that NQCC had rushed into negative comments about the project. After remonstrance from NQCC, the following was published in the Townsville Bulletin over the name of the NQCC Coordinator:

*I would like to clarify the position of North Queensland Conservation Council (NQCC) in relation to the proposed expansion of the Townsville port as I believe that the position attributed to me and the Council in the TB story of 25/3/13 does not reflect our views or my comments to the journalist.*

*When speaking with the journalist I was at pains to emphasise that I had not read the extremely lengthy report. I did say that I would be reading the report and looking particularly closely at specific issues: namely the need for the port (especially in the light of diminishing demand for coal – one of the reasons given for the expansion – and the proliferation of coal ports on the Queensland coast); the likely impact on the rich marine ecosystem of Cleveland Bay (especially seagrass, coral, dugongs and turtles); and the dredging and dumping of spoil in the sea between Cleveland Point and Magnetic Island.*

*I gave reasons as to why these issues were of particular concern, using the examples of temporary seagrass loss being sufficient to harm dugong populations, and the loss of coral due to sedimentation. I explained that*

*dugongs die if deprived of seagrass even for a temporary period; I did not say that dugongs would die as a result of the port expansion.*

*The issues of concern to NQCC are important ones, and the Council would need to be convinced on the basis of rigorous economic and scientific evidence that the port expansion could be justified and that it could and would be sufficiently benign to ensure that the environment would not be jeopardized.*

*I seek this clarification because NQCC does not make alarming or confrontational declarations without strong back-up evidence, and certainly not before having studied the relevant documentation.*

*We pride ourselves on our professional approach and the reliability of statements and do not wish to be seen to be making unsubstantiated comment.*

The comments in this submission reflect that commitment to professionalism and reliance on evidence and on careful (and in some cases expert-assisted) study of the document. The comments, nevertheless, reflect the most extreme concern about the quality of the analysis and, thus, the credibility of the conclusions drawn.

The EIS is to consider the impacts of the PEP against specific State and Federal legislation, including, at the Federal level, the:

- *Environment Protection and Biodiversity Conservation Act 1999*
- *Environment Protection (Sea Dumping) Act 1981.*

This submission is based largely on the fact that the quality of the studies undertaken for the EIS is such that the true impact on the matters protected by these pieces of legislation cannot be assessed.

The proponent has been badly let down by the various consultants commissioned, who appear to have delivered quantity rather than quality – especially not the quality that is essential when considering development in a World Heritage listed area.

This submission identifies many serious ways in which the EIS is an inadequate document by which to assess the impact of the Proposed Expansion Project (PEP) and, thereby, fails to meet the Guidelines for the EIS. NQCC's submission does not claim to be exhaustive but contends that the failures that are identified are sufficient for the EIS to be rejected.

## **1. Economic Analysis**

### **1.a Supply and demand for the PEP (Chapter B19 and Appendix T)**

As noted in Appendix T of the EIS, the 'need for the PEP' is 'underpinned' by trade forecasts prepared by the Port of Townsville Limited (POTL). These were supported by 'mine-by-mine analysis of port capacity needs'.

To give some legitimacy to this analysis (possibly little more than a 'wish-list' by mine-owners and other actual and potential port users), Deloitte Access Economics (DAE) was commissioned to 'review' (or substantiate?) the findings.

The work of Deloitte Access Economics is poor and, in many cases, unsupportive of the PEP. For example, it notes:

*“[forecast port] growth is highly dependent on resource projects, which in turn relies on commodity prices remaining at levels that ensure these projects are viable”*. It then goes on to show falling prices for major commodities that would use the port – providing research suggesting that the long run price of iron ore (used as a proxy for magnetite) is expected to fall by 55% and that the price of coking coal will fall by 50% in the long run.

And the DEA work makes a less than professional and quantitatively unhelpful assessment of growth in China and India with the comment *“Considering China is expected to crave commodities for some time yet, and that India is still set to hit its straps, this provides good news, at least in the medium term, for continued minerals exports from POTL, and the possibility of establishing a coal trade”*. Not the sort of comment expected from any economist worthy of the title.

Deloitte Access Economics further demonstrates either its failure to understand the very basics of economics or its contempt for the intelligence of the EIS readers by making the statement: *“Australia cannot expect to enjoy today’s high prices of its exported resource commodities forever”* and immediately follows up with the comment *“That noted, port throughput and capacity is driven by the volume rather than the value of the cargo...”* as if price would have no impact on quantity supplied or demanded!

There are other extremely unprofessional claims in the DAE economic analysis.

For example, it makes the statement, *“As a further cross-check on the POTL forecasts, DAE reviewed other sources of port throughput forecasts.”* It then goes on to provide a table purporting to show ‘Forecast growth in global commodity demand, 2010-2030’, citing ABARES and itself as sources. However, ABARES statistics at that time only forecast out to 2016 (BRITRE took over the forecasting role of ABARES, but its data was not completed at the time of the EIS) and there is no reference to any published DAE publication addressing this issue. So where did the data come from?

The DEA material refers to, and seeks justification from, a report undertaken by Juturna Consulting for MITEZ (the Mount Isa Townsville Economic Development Zone), which “repeated” (old) BRITRE statistics, as if repetition were proof of quality. Juturna notes that its report is based solely on ‘open source material and stakeholder consultation’; in other words, a literature review and chats with potential beneficiaries (each with their own wish-list): no research was done.

Despite all this talking up of the PEP, Deloitte Access Economics can only draw the very weak conclusion that the POTL forecasts are a ‘reasonable’ basis for planning purposes. This is an insufficient basis on which to found massive expenditure and to contemplate permanent damage to the regional environment, itself part of the Great Barrier Reef World Heritage Area.

Underlying the economic rationalization for the PEP was the statement that *“By the time trade reaches 33.4mtpa in 2024/25, nearly two-thirds of total tonnage is*

*expected to be in [nickel, coal and magnetite]”.*

Since the EIS was completed, much of the rationalization for the PEP has evaporated. The EIS notes that: *“Nearly 50% of the non-coal tonnage growth between 2009/10 and 2024/25(nearly 7.5mtpa) is expected to come from Yabulu more than doubling in size and diversifying into magnetite”.* However, in recent weeks, Yabulu has announced the shelving of its proposed \$1 billion expansion.

Furthermore, the outlook for coal exports has weakened considerable, with sources such as the Wall Street Journal within the last few days discussing the over-supply of coal ports in Australia, and the end of the resources boom being touted almost daily in various media. Of particular relevance is the following comment published in Bloomberg on 1 May 2103 *“Development of the Galilee Basin looks increasingly remote, Macquarie Group Ltd., Australia’s biggest investment bank, said in a May 1 research note. Prospects for project paybacks look extremely poor, the bank said. Further delays are likely unless “deep pocket” backers are able to ignore conventional economics, Sydney-based Macquarie said.”*

Despite this being an economic analysis, there is no discussion of the relative costs and benefits likely to accrue. While it is noted that the PEP is ‘staged’, there is no acknowledgment of the variation of any cost/benefit ratio (were any such analysis to be done) that would arise if the environmental and other costs were weighed against the ‘benefit’ just two additional berths (i.e., stage one), which would require the same massive dredging program and environmental damage as the full PEP.

Finally, it is noted in the economic analysis of the EIS that *“POTL is well-positioned to handle coal exports from the northern end of the Galilee Basin, reducing rail and ship travel distances to the nearest alternative port at Abbot Point”.* However, there is no attempt to even identify, let alone quantify, the costs and benefits of such ‘well-positioning’, or to whom the costs and benefits would accrue. Coal ports are already over provided for along the Queensland coast. Another, with all the ensuing costs, is not warranted.

<p><b>Solution:</b> The Economic Analysis of the PEP is extremely poor and must be re-done by independent experts and peer-reviewed, again by independent experts.</p>
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### **1.b Economic and related coverage (throughout)**

Related to the economic analysis that ‘underpins’ the argument for the PEP, is the issue or what development is considered in the analysis of impacts.

While the economic rationale for the PEP presented in the EIS is based on an expansion of the port to cope with vast increases in the export of nickel and magnetite and the introduction of coal to the trade profile of the port, when it comes to assessing the impact the POTL claims ‘no knowledge’ of what the expanded port will be used for. By this sleight of hand, the POTL fails to address the likely impact of the PEP.

Even within the Cumulative Impact Assessment, the sole purpose of which is to take into consideration associated impacts, to identify tipping points and avoid the problem of 'death by 1000 cuts', there is no reference to the impact of the anticipated uses of the port.

So, while the PEP is based on the export of vast quantities of coal through the expanded port, and there is an MOU between the POTL and Guildford Coal, a start-up company in the Galilee Basin (the stakeholder engagement officer of which is a member of the GBRMPA Board), the EIS does not analyse the impact of coal exporting on the marine environment or the GBRWHA.

There is little doubt that coal is expected to be exported through the expanded port. As Coordinator of NQCC, I was told by Consultant to POTL Margaret Card (pers. Comm. 20.4.13) where the coal storage sheds would be in the expanded port and how big they would be. Note, the placement of such massive storage sheds, likened to the sugar sheds already towering over the Townsville port, much further out into the Bay on reclaimed land, was not mentioned once in the assessment of scenic amenity or in any community assessment associated with the PEP.

This failure to include the impact of anticipated uses of the expanded port in the EIS is most obvious in the 'Cumulative Impact Assessment' (Part B24, considered later in this submission) but it is apparent throughout the EIS.

The failure to acknowledge future uses is a devious means of hood-winking the community into accepting a plan that they are not fully aware of and which hides from view the damaging impacts of the proposal.

Solution: Incorporate the anticipated uses of the expanded Port into all EIS analysis.
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## **2. Quality of dredge modelling (Attachment H1, Part C.2.1 and related chapters)**

### *(a) Compliance with GBRMPA Guidelines*

The dredge modelling done for the EIS does not comply with the recently released GBRMPA Guidelines for Dredging Projects in the GBRMP. For example, under the GBRMPA Guidelines, the modelling period for the PEP EIS would be an estimated 46 weeks; in practice, the EIS was based on just 6 weeks.

Admittedly, the EIS modelling was done before the GBRMPA Guidelines were published. But, with no urgency behind the proposal, and given the magnitude and location of the task and the dire state of the GBRWHA (in which the PEP would be based), anything other than world best practice is unacceptable. It is surprising that the consultants commissioned for this work were not aware of world best practice, or of the pending GBRMPA guidelines.

### *(b) Use of flawed modelling technique*

The ecological thresholds that have been used are based on the study of McArthur et al. 2002. Methodologically, this technique is flawed (and known to be flawed) because it only works if a threshold level (95% of the baseline data) is exceeded.

So total suspended solids (TSS levels) could be at the 94<sup>th</sup> percentile indefinitely and it would not trigger a management response. There is also a fundamental issue to do with using baseline (wind-driven turbidity) and dredge plumes: 100 NTU (a measure of turbidity) in a big storm with big waves and currents is very different when it comes to sediment deposition from 100 NTU caused by a TSHD (dredge) when it is gusting zero and a millpond. The latter would smother and kill but the former wouldn't.

Under the McArthur approach, the 95<sup>th</sup> percentile thresholds have to be exceeded before any further calculations of dredging duration and frequency are made.

The 95<sup>th</sup> percentile IDF for eastern Magnetic Island is 30 mg/L.

In the EIS, the IDF threshold for Geoffrey Bay is 30 NTU. So 30 NTU has to be exceeded for a management action to occur. Thus, an NTU of 29 at this site for a full year would not trigger a management action. According to the relationship in the Marine Water Quality section of the EIS that would mean corals and seagrasses could be in near darkness for one year and there would *still* be no management response.

*(c) Failure to address ambient turbidity*

The EIS report provides only 'above ambient' plumes, ignoring the already disturbed nature of the receiving environment and suggesting that, because background levels of turbidity are high, additional turbidity will somehow be irrelevant. Indeed, if background levels are high, there is all the more reason for avoiding additional stress through the PEP.

*(d) Other modelling issues*

- Why were the settling velocities 'assumed', when long-term real data records exist?
- Does the geotech vary from nearshore terrigenous siliclastic sediments to biogenic carbonate based sediments offshore (surely it does) and how does this affect the settling velocities and hence model outcomes?

Solution: The dredge modelling is totally inadequate and must be re-done in order to comply with the very highest of standards, and then peer reviewed by a high level expert panel.

**The dredge modelling is fundamental to all conclusions relating to marine water quality, seagrasses, corals, marine ecology and megafauna. *Until the modelling is re-done, no conclusions about the impact of the PEP on matter of national environmental significance (MNES) can be drawn.***

### 3. Dredge Management Plan (Part C.2.1)

*(a) Allowance for coral bleaching*

Virtually every dredging program in WA in recent years (Gorgon, Pluto, Wheatstone, Cape Lambert etc) has been spoiled by big bleaching events that render monitoring programs useless. What would happen if a bleaching event

occurred in February in Cleveland Bay, with ongoing impacts for many months? There is no consideration of this possibility in the Dredge Management Plan.

*(b) Dredge overflow*

The EIS states “*The dredge limits excessive overflowing (after an efficient load in the hopper is achieved)*” (C.2.1p.19). In other words, when the hopper is full of water (but not sediment) the plan is to keep dredging and allow the turbid water to overflow until the hopper has an ‘efficient load’. What is an ‘efficient load’? How does it relate to ecological criteria? Why are there no identified ‘no overflow’ zones?

*(c) Ambiguity in the DMP*

The EIS states “*Overflow strategies will likely be determined by the dredge contractor in consultation with the Port and/or advisory panel but can include for instance, placing a limit on the duration of overflow (allowing 1 hour rather than 2 hours) and the location of overflow (ensuring overflow occurs in segments where impacts have not been detected).*”

This is vague and ambiguous: the zones of controlled overflow (to the extent that they are quantified in terms of the Plan) need to be specified in detail (including GPS coordinates). It is essential that the Dredge Management Plan contains no ambiguities or opportunities for discretion of the contractors and the proponents (such as, ‘likely be determined’ and ‘can include’). Any plan needs to ensure that there is timely opportunity for any advisory panel to intervene in the dredging program.

*(d) Overly simplistic water quality decision tree*

The Townsville PEP decision tree for water quality, as set out in the EIS is overly simplistic (it is also contradicted in the text). A more appropriate tree would be that used in the Wheatstone project in WA. The Wheatstone program has ecological monitoring and water quality monitoring working together – if a water quality threshold is exceeded, then a verification ecological survey is undertaken – in addition to routine quarterly surveys. The result is a continuous learning and looping process and possibly a refinement of thresholds through a panel.

There are ‘stop works’ orders in the Wheatstone decision tree – i.e. a mechanism to stop all dredging until it has been figured out why water quality criteria were exceeded and there was ecological damage. There is nothing like this in the Townsville decision tree – the ‘solution’ to exceedance is just to dredge somewhere else.

*(e) Coral spawning and dredging*

The main coral spawning event on Magnetic Island occurs after the full moon in October, with additional secondary or ‘split’ spawning also occurring in November. The remaining GBR spawns in November, likely providing coral larvae to Magnetic Island from external sources. Coral spawning can still occur in December, and some species (e.g., *Montipora digitata*, one of the dominant species of coral on Cockle Bay Reef off Magnetic Island) can spawn as late as March or April. If dredging activities did not occur over the period from the start of November to the end of March, only some of the main spawning corals on Magnetic Island would be protected.

Solution: The dredge modelling plan must be re-done after the new dredge modelling exercise is completed in accordance with GBRMPA and other world best practice standards, in order to avoid ambiguity and maintain dredging at the highest standards. Ecological sustainability must be the overriding criterion driving the Plan.

#### **4. Marine Sediment Quality (Part B5)**

Sediment analyses appear to follow established procedures, focusing on metals, anti-foulants and pore water nutrients. However particulate nutrients were not included in the sediment analysis.

There is real concern that a substantial proportion of the nutrients is in the particulate form and may become bio-available. If that were the case, they would be slowly released into the marine environment during re-suspension, chronically increasing nutrient levels. Particulate nutrients are a key factor supporting seaweed growth on reefs.

Solution: Undertake further studies to determine the impact of the PEP on re-suspension of particulate nutrients.

#### **5. Marine Ecology and Conservation (Part B6)**

By far the largest reef of Magnetic Island (Cockle Bay Reef) seems to have been surveyed by only six 30-m transects in the southern corner, ignoring over 5 square kilometres of this vast and expansive coral reef (B.2.2).

There are steep gradients in reef condition along the >5 km of reef frontage, so, as a result, the surveys conducted were not representative of the upper half of this reef. The western side will be highly exposed to high turbidity during the channel dredging (Appendix H1, Figs 6-22 to 6-24, 6-29 to 6-30), and is likely a depositional area (as indicated by mangrove stands), and hence potentially susceptible to sedimentation effects.

The northern side, which is also a depositional area under at least some wind and current scenarios (Appendix H1, Fig 5-12), appears to have been surveyed inadequately. Again, northern reefs are different (soft coral dominated) from the other reefs, and these differences should have been captured in the surveys.

Solution: Re-survey the Cockle Bay Reef and ensure that all surveys related to marine ecology and conservation are fit-for-purpose.

#### **6. Reactive monitoring program (Part C2.1.3 and elsewhere)**

In the EIS, coral reef monitoring sites are currently located at the tips of headlands (as per Figure C2.1.3), where sediment deposition rates and coral cover are low, rather than in bays, where the converse is the case. Because of this they are



ineffective and inappropriate sites for measuring the impact of work, especially dredging.

Furthermore, monitoring by the proponent is not acceptable.

Solution: Reactive monitoring sites must be placed within the bays rather than at the tip of the headlands where sediment deposition rates and coral cover are both low. The reactive monitoring program is crucial, and must be conducted by an independent body.

## **7. Potential Acid Sulfate Soil (Appendix F7)**

The study is largely based on a PhD study conducted in 1970, complemented by a few more recent soil samples and bore hole tests. There appears to be a large proportion of sediments that are classified as 'potential acid sulfate soils' (that is, becoming acid sulfate soils (ASS) once in contact with oxygen).

The amount of scientific data available to the report to fully assess the extent of ASS appears inadequate, and more ASS investigations appear necessary.

The study proposes that sediments that contain ASS will be disposed of at sea below the lowest astronomical tides water level. However, below lowest astronomical tides could well be within wave re-suspension zone. Their re-suspension would bring them into contact with 100% oxygenated water, potentially facilitating the formation of low-pH conditions.

Solution: Given the high sensitivity of corals to low pH, a study on the effects of ASS on corals and other reef-associated organisms is essential to prevent long-term impacts on the coral reefs of Magnetic Island.

## **8. Non-compliance with the Environment Protection (Sea Dumping) Act 1981 (Appendix E4)**

The EIS is required to provide a "*detailed evaluation of all disposal options*" for the 9.9 million cubic metres of spoil dredged from the seabed.

The EIS recommends that 5.6 million cubic metres be dumped in the ocean (within the Great Barrier Reef World Heritage Area).

Nevertheless, no costs are provided that would allow assessment of whether land-based alternatives are disproportionately costly. Disproportionate cost is assessed against the total cost of the project, not against the costs of dumping on land/sea.

The assessment of alternative dump sites does not identify specific sites, does not examine the potential business value of using spoil in brick manufacture and fails to consider at all land-based non beneficial use disposal options.

The EIS states, "*It would not be practical to re-use the soft marine silt on land. The*

*material would need to be dried out and treated in some fashion to enable it to be handled for re-use onshore.” There is no justification provided for the claim that such use would not be 'practical'. Regardless, practicality is not a legal basis for dismissing land-based disposal options.*

The EIS relies on claims of high costs to justify sea-dumping. For example, “*While onshore reuse of selective volumes of competent fill may be technically possible, the cost to dredge and pump those materials alone is not economically viable.*” The proponents fail to identify specific costs and fail to make any argument that costs will be disproportionate.

Solution: A comprehensive analysis of potential disposal sites must be undertaken in order to comply with the Environment Protection (Sea Dumping) Act and properly identify an appropriate site. (NOTE: Identifying such a site is not a community responsibility.)

## **9. Underwater noise (Appendix K3)**

Underwater noise is an issue of real concern for the world’s oceans. This is illustrated by, for example, the fact that the Commonwealth Fisheries Association has listed seismic noise as a Key Threatening Process for tuna and other species; seismic companies in WA are concerned about all kinds of noise impact on fisheries; and southern Australian fishermen have recently registered long-range seismic noise as a Key Threatening Process, with good data backed by CSIRO. Unfortunately, especially for the GBRWHA, Queensland lags far behind on this matter – a fact that is sadly reflected in the work on underwater noise prepared for the EIS.

The impact of shipping noise on fish (as well as on dugong, dolphins, whales, turtles etc) is increasingly under review.

- The US seismic industry recently conducted a major symposium on the effect of exploration and shipping on invertebrates and fish, and their fisheries.
- There are in the order of 25 papers from the northern GBR where noise from shipping has been advanced as a real concern in relation to settlement on coral reefs by coral and other invertebrates and fish larvae.
- Adult fish, such as all the cods (coral trout family) and tuna (Spanish mackerel), rely on sound communication at spawning and are at risk from rising sound levels. Fish from inshore and more turbid waters probably more so.
- Commercial fishermen, mainly Cairns-based, have been attempting to have the impact of noise on fisheries recognised for decades. Cairns commercial fishermen have been bringing up underwater noise as a specific fishery problem for Spanish mackerel since 1980. No spawning fish on fishing grounds means reduced fish, yet to date fishing activity has been advanced as the only likely reason for reduced catches.
- Fishermen have asked for underwater noise to be placed on Queensland and GBRMPA management plans (with water quality etc) but this has not

occurred, although the impacts of underwater noise from shipping are steadily being incorporated into the GBRMPA website.

- There have been three shipping noise conferences this year associated with shipping noise mitigation. They would not have been held if noise were not considered to be an issue.
- The new CSIRO vessel is being built with a reduced noise signature. Why build such a vessel if shipping noise was not an issue?

Despite the fact that noise is listed as a water quality parameter in the Australian New Zealand Water Quality Guidelines, no Queensland fishery management plan considers underwater noise pollution as a water quality parameter.

To date, no world standard acoustic baseline studies have been conducted in GBR waters. In the PEP EIS, despite the fact that the GBRWHA in which it is proposed is of outstanding *universal* value, the surveying field work undertaken for assessing underwater impacts falls far short of world best practice and is inadequate – for example:

- It uses a mere two days of ‘dipping’ (analysed in 5 minute chunks) to represent long-term ‘true ambient’. True internationally acceptable baseline levels on any environmental parameter would incorporate diurnal and seasonal effects.
- The dipping system used removes all information about the very low frequency components, which strongly influence fish, and are produced by all vessels.
- The ambient plot used was not an industry standard Power Spectral Density (PSD) percentile plot. Because of this, the data are meaningless and cannot be compared with any published ambient levels or studies.
- The same ‘RMS Pressure’ plot is used to define the SLs of a dredge, which, when combined with the 50Hz highpass used, results in information that cannot be relied upon.
- Only 3 modeling transects were done, and these merely using the free CMST modeling tool.
- The extensive use of m-weighting biases results, and will not allow for the data to be applied to fish or whales.

Solution: The underwater noise modeling and assessment must be re-done in line with world best practice by acoustic experts and with high-level peer review.
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## 10. Offsets (Part B.23)

By far the greatest offset proposed (93%) is that attributed to ‘Protection of an additional area of intertidal benthic habitat as Fish Habitat Area’. This would involve the inclusion of an additional sliver of sea, between the edge of the PEP footprint and the existing Fish Habitat Area (FHA), to the existing FHA. The value of this is calculated as \$142 million.

The fabulous irony of this proposed offset contribution is that, as pointed out in the EIS, the “*POTL does not own or lease the seabed proposed for the FHA extension...*”. The sole relationship between the POTL and the area proposed to be added to the

existing FHA is that the “... POTL has previously objected to the inclusion of the seabed immediately adjacent to and east of the Ross River channel mouth in the FHA”.

The POTL is now offering to “rescind its previous objection” and putting that rescission up as an offset worth \$142 million! This is an abuse of the offset process and an insult to the community (which does own the seabed!).

I was also informed (pers.comm with Margaret Card, 20.4.13) that this supposed offset contribution would ensure that the port could never be further expanded eastward. This makes no sense: (1) the narrow width of the sliver of seabed at issue would be far too small for any expansion; (2) the vast area behind the sliver is already FHA, so ‘preventing development in that direction’; and (3) FHA is no guarantee of protection (for example, FHA was sacrificed for the construction of the Townsville Marine Precinct – the offset for which was a boat ramp for fishers!).

Solution: The proposed offset must be rejected and the proponent required to identify ways in which there are no residual impacts, after the true impact has been identified following the conclusion of new studies of the PEP.

## 11. Cumulative impact (Part B24)

The so-called ‘cumulative impact’ provided in the EIS is, in reality, no such thing. It focuses exclusively on the impact of the PEP and fails to address contemporaneous or planned developments (including but not restricted to the port access bridge, the new marine berths for fishing boats that could no longer access the river due to it being partially sealed off is a consequence of the port access bridge, the port access road, the export of coal through the port, the impact on beach profiles in Townsville.)

Furthermore, it fails to address synergistic impacts. The Cumulative Impact Assessment (CIA) is merely a discussion of individual impacts and a simple attempt to add these together. There is no modelling, no named expert panel and certainly no peer review to explain how alleged cumulative impacts have been derived. Conclusions related to cumulative impacts appear to be little more than subjective comments.

### *(a) Failure to consider relevant projects*

The CIA has failed to identify fully activities/projects that will have a cumulative impact. Projects that are considered (Part B24) are only those “that are likely to have the greatest potential contribution to an overall cumulative impact in Cleveland Bay” and “which have a direct relationship to the port’s and region’s growth.”(p:839)

This is in conflict with Franks et al. (2010, *Cumulative impacts - A good practice guidelines for coal industry*), in which cumulative impacts are defined as, “successive, incremental and combined impacts (both positive and negative) of an activity on society, the economy and the environment.” Franks et al. further states that cumulative impacts can arise from the compounding activities of a single or multiple operations and processing operations, as well as the interaction of

impacts with other past, current and future activities that may not be related to target activity.

The EIS makes no mention of other occurring or planned impacts on, for example, marine habitat related to other port developments up and down the coast.

By selecting only the projects with greatest potential and direct relationship for consideration in the cumulative impact assessment of the PEP, the proponent has clearly failed to address the relevant impacts.

And, while the economic rationale for the PEP presented in the EIS is based on an expansion of the port to cope with vast increases in the export of nickel and magnetite and the introduction of coal to the trade profile of the port, these anticipated activities are studiously ignored in the CIA.

*(b) Inconsistency of projects considered relevant to the CIA*

In B.3.6, the cumulative impacts of coastal processes, relevant projects are given as:

- The marine precinct development
- Construction of berth 12 and associated vessel manoeuvring areas
- Minor channel improvement works
- Construction of berth 10A.

However, the relevant projects in the port and coastal development CIA section (Part B - Section B24 of EIA, p: 839) are:

- Townsville Marine Precinct
- Port of Townsville Berth 4, 8 and 10 expansions (port inner harbour)
- Port of Townsville Berth 12 and associated vessel manoeuvring areas (port outer harbour)
- Minor improvement works and maintenance dredging to Port of Townsville shipping channels
- Townsville State Development Area, south of Ross River
- Eastern Access Corridor (EAC), including Townsville Port Access Road (TPAR) and rail access
- Townsville Recreational Boating Park (Ross River).

Furthermore, according to section B.3.6 (cumulative impact on coastal processes), the PEP will affect local wind wave propagation to The Strand, altering the sand transport regime and thus changing the shoreline alignment. These changes are expected to extend over about 5 years. The issue of the impact of shoreline alignment is not addressed in the CIA. Neither is the impact of maintenance dredging – an impact that is written of as ‘normal’ dredging activity.

*(c) Lack of mitigation for cumulative impacts*

While mitigation methods have been suggested for individual impacts, there is no mitigation for cumulative impacts. Indeed, the proponent appears to have misunderstood the very rationale for cumulative impact, that is, that the total impact is often greater than the sum of the parts.

For example, the EIS states, *“The identified set of projects and proposals may lead to a short term loss of food resources for marine vertebrates in the disturbance footprint”*. However, despite the fact that dredging activities will be undertaken on numerous occasions between the period 2014 to 2031, there is no attempt to assess the cumulative impact of a number of ‘short periods’ of food resource loss.

For example, section B.7.6 (cumulative impact on terrestrial species) states; *“The potential impacts are greatest to shorebird roosting and foraging areas, which can be reduced through appropriate mitigation measures and avoidance of **direct** [emphasis added] impacts to these known areas. The PEP is unlikely to contribute significantly to the cumulative direct impacts”*.

Here, the report has failed to address the objective of CIA. It is not only the direct impacts that should be mitigated but successive, incremental and combined impacts, compounding activities, interaction of impacts. Mitigation should also address current and future activities that may not be related to target activity.

As a final example of the inadequacy of the CIA, we note that the EIS states *“Elevated noise and vibration during the construction phase may potentially disturb foraging and roosting on the sand spit on the eastern side of the Ross River but evidence is that populations coexist with port activity and current construction of TPAR bridge in the immediate vicinity.”*

The report shows evidence of potential impact. But it uses previous co-existence of the species with development projects to suggest that co-existence will be the norm under the greatly expanded Port.

The GBRMPA website (2013) includes the statement, *“Proponents who refer a development proposal action during this period [the period of the current Strategic Assessment of the GBRWHA] will be expected to meet a high standard of assessment in terms of the level and rigour of information provided, including the consideration of cumulative impacts. This will ensure project-by-project assessments that occur during the strategic assessment period are managed appropriately and will not compromise the strategic assessment process.*

It is not unreasonable to expect that the EIS would have met a high standard in its CIA. Unfortunately, it fails by a long chalk.

Solution: A full and proper cumulative impact assessment must be done for the PEP in line with the Terms of Reference.
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## **12. Scenic Amenity/Aesthetics (B17)**

For the purposes of the World Heritage Convention, ‘natural heritage’ includes natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view and natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty.

As the EIS states, *“For the Great Barrier Reef to obtain a world heritage area designation, it was required to demonstrate a number of internationally significant values including aesthetic attributes. In particular, of the four World Heritage Criteria associated with the GBRWHA designation, criteria of key consideration in the context of this assessment is (vii) to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance”*.

There is a difference between ‘beauty’ and ‘aesthetics’. There is also a difference between both of those and ‘scenic amenity’.

A number of other tools have been devised in an attempt to codify and measure levels of scenic amenity. None recognise cultural ties to the landscape, or the role of ‘sense of place’ landscapes in community identity, or the idea of beauty, or aesthetic value or the aesthetics of place, or the concept of Outstanding Universal Value applicable to a World Heritage Area.

As noted by UNESCO, *“Development and land use activities in coastal and water catchments adjacent to the property also have a fundamental and critical influence on the values within the property”*.

In the Townsville PEP EIS, scenic amenity is defined by the very method that purports to measure it. What the method actually measures is a change in the apparent area of scene elements in successive static two-dimensional representations. This is a long way from measuring human aesthetic responses to real life natural landscape views and the incursion on those landscapes of built elements. Human beings are not cameras. Further, it has no relationship to the objective reality of built elements degrading a landscape valued for its aesthetic (and other) qualities, in this case, part of a world heritage area listed for its outstanding natural beauty and biodiversity.

The scenic amenity studies of the PEP EIS do not report on the underwater aesthetics. Underwater visibility will be seriously reduced by fine particulate in the water column resulting from dredging and other bottom-disturbing port activities. The natural aesthetic of Magnetic Island's fringing corals will be damaged as more corals succumb to siltation. The appearance of turtles, dugongs and snubfin dolphins at and below the water surface are intrinsic features of Cleveland Bay and a source of joy and wonder, contributing to the aesthetic value of the GBRWHA. Their loss as a result of increased port activities has impacts beyond Cleveland Bay; and will damage both the natural and the aesthetic values of the GBRWHA, as well as its integrity.

The scenic amenity value relates only to two-dimensional, scale-related changes as seen from some selected viewing points. It is simplistic because it measures only a numerical change in the relative apparent areas of elements in the view and concludes that the further away the viewer from the port, the more neutral the change in amenity. This is self evident – go quite out of sight of the port and the impact on scenic amenity (but not necessarily aesthetics) is zero. Such a measurement of incremental change being related only to closeness, suggests that the port could go on expanding endlessly – as long as people were far enough away.

As mentioned in 1b above, as Coordinator of NQCC, I was told by consultant to POTL Margaret Card (pers. Comm. 20.4.13) where coal storage sheds would be in the expanded port and how big they would be. However, the placement of such massive storage sheds, likened by Ms Card to the sugar sheds already towering over the Townsville port, much further out into the Bay on reclaimed land, was not mentioned once in the assessment of scenic amenity or in any community assessment associated with the PEP. Such structures are not represented in the 'Viewpoints' created for the Scenic Amenity Assessment, in which the reclaimed area appears invariably as a flat area without buildings or any other features.

Similarly, the impact of the PEP on Townsville beaches, especially The Strand (described in the EIS as '*a Townsville landmark, consisting of a 2.2 km 'world-class beachfront promenade custom-built for enjoyment' (TCC, 2010b) with bike and walking paths, parkland, picnic spots, restaurants, swimming beaches and panoramic water views across Cleveland Bay*), which might, according to the EIS, require 'additional beach replenishment' or 'the introduction of hard revetment structures' as a result of the PEP, is not mentioned in the Scenic Amenity chapter of the EIS.

Solution: Go back to the criteria of the World Heritage Convention and measure the full impact of the anticipated PEP on the aesthetic values of the site.

### **13. Numerous attempts to downplay the impact of the proposed PEP (throughout the EIS)**

- Throughout the EIS, there are numerous examples of downplaying the impact of the PEP and the nature of the existing environment. For example:
  - The more than doubling of the number of vessels using the port is described as 'minor'.
  - Flood surge is put at 0.4 metres, a height that has been greatly overwhelmed in recent weather events on Magnetic Island.
  - the EIS acknowledges that the port expansion would have an impact on Townsville beaches (particularly The Strand and Rowes Bay). It provides data on sand transport rates along 'The Strand Beaches' but then, somewhat delightfully, describes the accuracy of the data as 'relatively modest'. It concludes that the impact could be 'mitigated' by 'additional beach replenishment' or 'the introduction of hard revetment structures'. Despite this, the impact of the planned expansion on beach systems is ignored in the EIS's Cumulative Impact Assessment for the project.
  - In discussing underwater noise assessment (Appendix K3), the EIS notes that "*Although the maintenance dredging is proposed to occur at regular intervals, the duration of each event is not likely to exceed four weeks. Given that maintenance dredging and channel marker modifications will occur sporadically and over short durations, the noise impacts are therefore likely to be negligible*". There is no indication of the time between 'regular intervals', and no support provided for the conclusion that noise impacts will 'therefore' be



negligible. The impact of increased underwater noise as a result of a doubling of the number of big ships that would be using the port is not fully discussed and, once again, underwater noise is not included in the EIS's Cumulative Impact Assessment.

- The EIS (B17) notes that *"The introduction of additional port lighting would extend the level of lighting in the background of the view and further into the seascape. This would represent an incremental increase in light levels compared to the current situation..."* but dismisses this impact on the Great Barrier Reef World Heritage Area's outstanding universal value with the glib and unsupported statement *"...this is not perceived as an adverse effect on views, given some people accessing these areas at night are anticipated to like additional views of port lighting"*.

#### **14. Need for an international scientific expert peer review**

The EIS has been prepared by consultants commissioned by the State-owned corporation, the Port of Townsville Ltd. The State of Queensland will be making the State decision on the acceptability or otherwise of the proposed PEP. The State government has previously expressed support for the expansion of the Port of Townsville. The State decision-maker, the Coordinator-General is charged with 'fast-tracking development' – a process not conducive to careful environmental assessment and the precautionary principle. All in all, the EIS process cannot be said to have been undertaken at arms length – at least as far as the State is concerned.

While an additional level of decision-making accrues to the Federal government, it is unlikely that staff will have the time or capacity to assess the highly technical document.

The PEP is a major, long-term and not urgent, project scheduled for a particularly sensitive area at a time when pressures on that area are causing national and international concern.

The highest level, fully independent expert review is not just appropriate it is essential.

<p>Solution: A body of the calibre of the Smithsonian Institution in Washington must be commissioned by the Federal government to undertake a review of the EIS. Such a review would assuage local, national and international concerns about the impact of this huge PEP on the fragile environment in which it would occur.</p>
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#### **15. Failure to acknowledge or comply with UNESCO requests**

In informing Australia of its concern about the health and management of the Great Barrier Reef World Heritage Area, UNESCO noted that, in order to avoid the Area being placed on the World Heritage in Danger list, no further development of ports *"It is essential that development is not permitted if it would impact individually or cumulatively on OUV, including the integrity of the property. This measure should*

*apply both within and in the adjacent areas to the property. This measure should take immediate effect and requires full application until the Strategic Assessment and the resulting long-term plan for the sustainable development of the property has been completed, and has been considered by the World Heritage Committee at its 39th session in 2015”.*

While much focus has been placed on the recommendation against new ports, UNESCO does include *any* development that has a negative impact on the OUV of the GBRWHA. Even as a long-established port, the Townsville port is not excluded from UNESCO’s concern.

Obviously, the Strategic Assessment has not yet been completed, let alone reviewed and accepted by UNESCO. Furthermore, it is contended that the Townsville PEP will have a negative impact on the OUV of GBRWHA, although the magnitude of this negative impact cannot be estimated given the poor quality of the EIS.

Solution: Carefully assess the quality of the EIS, considering comments made in this and other submissions and by relevant expert staff and others, and require independent re-assessment (paid for by the proponent) prior to any decisions being made, and delay any development in line with the requirements of UNESCO.

In conclusion, NQCC notes that the Port of Townsville was established in 1884, to allow small ships to ply largely local and regional waters. It was not established with an eye to catering for thousands of massive ships traversing the globe. The port is located in a shallow bay, which is recognised as a biodiversity hotspot, adjacent to the Great Barrier Reef, which has been internationally recognised as a fragile environmental icon with outstanding universal value, requiring careful management. The highly industrialised port is located in the centre of a major city with a large and growing population and a significant tourism industry. The iconic marine environment that the port uses is at an extreme level of stress, and at risk of irreparable harm: Indeed the death of the Great Barrier Reef within two to three decades is not out of the question. Further expansion of the Port of Townsville will cause permanent, irrevocable and significant damage to the GBRWHA. It is time to re-consider the sense of a major port in the current location.

Yours sincerely



Wendy Tubman  
Coordinator