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Submission on to the AEIS for the Port of Townsville Expansion Project

North Queensland Conservation Council (NQCC) was a respondent to the March 2013 Environmental Impact Statement (EIS) on the proposed expansion (PEP) of the Port of Townsville (also referred to as ‘the Port’ or PoTL). We now make this submission on the recently released Additional Environmental Impact Statement (AEIS).

As stated in our 2013 submission on the EIS, NQCC was established in 1974, and works to protect the environment of North Queensland through programs of education, and responding to requests for comment on proposed development and legislation. An independent incorporated body, NQCC is one of several regional Conservation Council’s that work together and with the Queensland Conservation Council and other agencies working to protect the environment as and when appropriate.

Table of Contents

| | |
|---|-----------|
| Executive Summary | 3 |
| 1. Opening Statement in relation to the AEIS | 4 |
| 1.1 Scale of differences between the EIS and the AEIS | 4 |
| 1.2 Incompleteness of the AEIS | 4 |
| 1.3 Conflicts between the EIS and the AEIS. | 5 |
| 1.4 Downplaying and exaggeration in the AEIS | 5 |
| 1.5 Lack of demand for the PEP | 6 |
| 2. The multiple changes in design | 7 |
| 2.1 The increased duration of dredging | 8 |
| 2.2 The deepening of the channels | 9 |
| 2.3 The widening of the channels | 10 |
| 2.4 The increase in maintenance dredging | 11 |
| 3. Effective demand for any expansion | 12 |
| 3.1 Levels of use of the Port | 13 |
| Usage by BITRE’s standard | 13 |
| Usage by the Port’s standard..... | 13 |
| Cessation of nickel trade | 14 |
| Use of exaggerated scenarios | 14 |
| Future expansions? | 15 |
| 3.2 Cargo | 15 |
| Containerisation | 17 |
| Servicing the cruise ship tourism industry | 17 |
| 3.3 Efficiencies at the Port | 18 |
| 3.4 The business case for the proposed expansion | 19 |
| 4. Dredge modelling | 19 |
| 5. Use of dredge spoil in reclamation | 21 |
| 6. Underwater noise | 22 |
| 7. Loss of and damage to habitat | 23 |
| 8. Offsets | 24 |
| 8.1 Cleveland Bay Fish Habitat Area (FHA) as an offset | 25 |
| 8.2 Calculation of the FHA offset benefit | 25 |
| 8.3 Offsets for dolphin habitat | 26 |
| 8.4 Offsets related to dredging..... | 26 |
| 9. Cumulative Impact Assessment | 27 |
| 10. Reactive Monitoring Program | 31 |
| 11. Closing statement | 32 |
| Appendix A: 2012 PoTL Fact Sheet distributed in the community | 34 |
| Appendix B: Extract from the Environmental Dredging Program prepared for the 1993 Port capital dredging campaign | 35 |

Executive Summary

When it was established in 1864, the Port of Townsville was well located in the protected, shallow waters of Cleveland Bay. Overtime, the suitability of this location has waned.

Cleveland Bay is now known to be an ecological hotspot within what is now acknowledged and classified as an area of World Heritage value. This area is now suffering significant problems associated with human activities, including dredging and port development – both of which are recognised in the GBR Strategic Assessment as threats to the Reef.

Of particular concern in relation to this AEIS is the fact that the radically new design, determined largely by the ongoing constraints of its location, will not address the underlying problem facing the Port – namely, the natural shallowness of Cleveland Bay.

While the new design would not address this problem, it *would* involve massive increases in the duration and amount of capital and maintenance dredging, with all their associated environmental and social impacts, and the dangerous (think Gladstone) bunding of acid sulfate soils (ASS) adjacent to the waters of the GBRWHA.

This submission details these issues and reveals that, while the project would have major negative impacts on the environmentally and economically valuable World Heritage Area, especially at a local level, there is no *substantiated* demand for it. Furthermore, this submission contends that the AEIS estimates of the opportunity cost of not proceeding with the project are based on grossly exaggerated hypothetical scenarios.

This submission notes that, in contravention of Reef 2050 (a plan developed by all levels of government at the request of UNESCO and intended to improve management of the Reef), there has been no attempt by proponents of the proposed new dredging works to demonstrate the commercial viability of the project prior to a request for approval.

1. Opening Statement in relation to the AEIS

1.1 Scale of differences between the EIS and the AEIS

It is inaccurate to describe the AEIS as 'Additional Information to the Environmental Impact Statement'. 'Additional' implies something that takes the original and adds to it. NQCC contends that the differences between the project outlined in the EIS and that outlined in the AEIS are so significant that we are confronting a different project. In effect, the project has been very significantly changed midway through the EIS process. This is unacceptable and the EIS process should be re-started.

In a Fact Sheet distributed by the Port in 2012 (See Appendix A for a regrettably poor quality scan) the community was told that,

The port expansion is designed to accommodate the regular operation of Panamax ships. This requires no widening of the channels other than the approaches to the new outer harbour.... Similar plant and equipment [to that used in the regular maintenance dredging] would be used, such as a trailer suction hopper dredge..."

Significant changes to the project include a massive increase in the duration of dredging (from 4 to 10.5 years), an increase in the amount of capital dredge spoil, a huge increase in annual maintenance dredging, the massive increase (up to doubling) of the width of the channels, and a 52% increase in the area of sea reclaimed.

Different (backhoe/grab) dredging equipment would be used, and even the six new berths may or may not go ahead.

Such major change at this stage is an abuse of the EIS process.

Given the massive changes to the project, the time available for thorough analysis of the project and community education, has been totally inadequate. The 2013 EIS was available for comment from 23 March to 27 May 2013 – a period of 42 working days. In contrast, the AEIS, which relates to a very significantly different project (including, but not limited to, changes in the amount, duration, location and method of dredging, the extent of habitat reclamation, the rationale for the expansion, and the models used to estimate impact), has been open for comment for a period of just 21 days.

1.2 Incompleteness of the AEIS

The AEIS is incomplete, with much work still to be done. This *includes* such vitally

important aspects as, the use of ASS and PASS dredge spoil in reclamation; the presence of stromatolites; a Sampling and Analysis Plan (in accordance with requirements set out in the National Assessment Guidelines for Dredging (NAGD)); a Marine Megafauna Management Plan to manage noise impacts to fauna; a construction stage marine pest management plan; a Reactive Monitoring Program; mitigation strategies to minimise the risk to sensitive ecological receptors; and, above all, a business case for the project.

In the absence of such data it is not possible to draw conclusions with respect to feasibility, cumulative impacts and offsets, and, above all, it makes it impossible to come to an informed and reliable decision on whether or not to approve the application.

Such omissions and assumptions make a mockery of the assessment process.

1.3 Conflicts between the EIS and the AEIS.

Third, given the multiple ‘turn-arounds’ from the EIS, evident in the AEIS (e.g. what was ‘not possible’ in the EIS has suddenly become ‘possible’; what was essential in the EIS is no longer at all necessary), the credibility of all statements in the both the EIS and AEIS must be queried.

For example, it is noteworthy that, in the EIS, released prior to the change in sea dumping legislation, use of all the spoil for land reclamation was described as ‘**unreasonable**’ in terms of the reclamation footprint (EIS, App E4,1). The EIS also stated, ‘*It would **not be practical** to re-use the soft marine silt on land*’ (EIS App E4, 2.3); ‘*The EIS concludes, ‘Notwithstanding the approximately 4.3 million m³ of dredged material (stiff clays) from the Outer Harbour basin to be re-used in the reclamation, onshore re-use of the remainder of dredged material is considered **not to be a viable option**... Handling and stockpiling onshore would also result in **significant management issues and potential environmental effects**... 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, nor is the material likely to be utilised effectively**’.*¹ [Emphases added]

As another example of such ‘turn-arounds’, the EIS is based on the need for significant deepening and very limited widening, whereas the AEIS calls for less deepening but huge widening.

1.4 Downplaying and exaggeration in the AEIS

¹ Given that Reef 2050 requires all proponents of new dredging works to demonstrate their project is commercially viable, this EIS statement must surely doom the project – unless, of course, it was not accurate at the time it was made; a possibility that draws into question all other statements in the EIS and AEIS.

Fourth, NQCC pointed out in its submission to the EIS that the significance of impacts associated with the project was constantly downplayed and/or the need for the project was exaggerated. This called into question the reliability of all statements made in the document.

Such an approach continues in the AEIS. For example, the AEIS, (Section 2.3) states, '*A number of significant changes also emerged in terms of environmental regulation and government policy...*'. The 13 dot points that follow refer to just *three* changes: the Federal government banning of the dumping of capital dredge spoil in the GBRWHA (bringing practice into line with the long-standing but long-ignored London Protocol of the *Environmental Protection (Sea Dumping) Act 1981*); the release of the 2014 GBR Outlook report²; and the Queensland government's *Sustainable Ports Development Act 2015*.

The only change with any impact on the PEP was the ban on sea dumping of capital dredge spoil. Presumably, the 13 dot points were included in an attempt to make the impact of legislative changes appear more significant in the rationale for the design changes.

As another example, the 14-17% increase in annual maintenance dredge spoil to be dumped in the GBRWHA waters off Magnetic Island (that is, on average, an extra 56,000 to 68,000 million cubic metres per year) is variously referred to as 'modest', 'slightly increased' and 'not significant' (AEIS, 6).

And, although maintenance dredging will increase by 14-17%, the maintenance dredging campaign was modelled assuming only an additional 14% of maintenance dredge material (i.e., the lower limit). (AEIS 6, p.107)

Finally, the hypothetical scenarios used to demonstrate the need for the port expansion and the impact of the limited access to the port due to tidal conditions, are grossly exaggerated. (See 3.1 below). These exaggerated scenarios are used to come up with (resultantly grossly exaggerated) estimates of lost output, lost value added, lost household income and reduction in employment.

1.5 Lack of demand for the PEP

Finally, no demand for the proposed increase has been substantiated. This issue was raised not only by NQCC but also by the Department of State development and Maritime Safety Queensland. The issue of the paucity of the economic analysis of the EIS, strongly raised by NQCC in its submission to the EIS, has not been adequately addressed.

² The Outlook reports are released every 5 years - this one showed the health of the GBR to be still in a poor state, something that came as no surprise given numerous reports during the lead-up to Report's release.

In relation to demand for the expansion, the intention of the newly established Asia Australia Consortium to exclude Townsville from its three new Asia-Australia dedicated services is not mentioned. Nor is the fact that *China's Rizhao Port Group and Australian Great Southern Shipping have joined forces to create a new shipping partnership, which will operate a service between the two countries through five Australian-flagged 5,000 TEU ships*.³ This service does not include Townsville as a port of call. But, even if Townsville were to be included in the schedule, these ships would not require the massive expansion proposed in the AEIS.

The hypothetical scenarios introduced in the AEIS in an attempt to justify the proposed expansion are grossly exaggerated.

This and other issues are further discussed in the remainder of this submission.

2. The multiple changes in design

The 2013 EIS (1.1.4 Project Rationale, p. 2) states:

The increase in trade will ultimately require shipping with larger vessels, along with the development of additional berth space, deepening and other minor modifications to the channels to the port (the Platypus and Sea channels). These capital improvements are required to overcome constraints imposed on vessel size by the present channel geometry.

Studies, surveys and data collection have been undertaken since 2008 in support of the Project ... As a result, the preferred designs and methodologies have responded to and reflect a long period of design refinement...

and

The existing channels already handle ships of Panamax width, but will need to be deepened to accommodate the larger capacity (and therefore deeper draught) Panamax ships proposed for the new bulk trades. There is therefore no economic driver to widen until a particular trade (which cannot be forecast at present) is proposed that has a strong economic argument to use wider ships'. (EIS, Section A, p.70)

Notwithstanding this 'long period of design refinement', the design presented in the 2016 AEIS is very markedly different, involving a shorter channel (presumably because the EIS design involved a significant intrusion into the GBRMP); a reduction in the channel deepening (presumably resulting from the decrease in

³ <http://worldmaritimeneews.com/archives/192254/china-australia-to-launch-new-shipping-service/>

length); and a massive, but in 2013 unnecessary, widening of the access channels. The duration of dredging would blow out from an already high 4 years to 10.5 years. The new design also involves considerably more capital and maintenance dredging, and a 52% increase in sea reclamation.

NQCC is aware of (indeed, was instrumental in delivering, and supports) the legislative ban on dumping of capital dredge spoil in the GBRWHA (as mentioned above, already implicit in the long-standing but long-ignored *Environmental Protection (Sea Dumping) Act 1981*, and understands that this requires capital dredge spoil to be beneficially used.

However, it is not clear why the ban on sea disposal of capital spoil necessitates an increase in the amount of capital and, thus, maintenance dredging.

The AEIS (21.2.5, p.258) notes that currently around 65 ships a year have only restricted access to the Port of Townsville. This represents only⁴ 10% of vessel accessing the port each year. Furthermore, widening (rather than deepening) of the access channels will not change the number of ships that have tidally restricted access due to the depth of those channels.

The AEIS (section 21) also reports that around 10 ships a month bypass Townsville *en route* to Brisbane. Given the population distribution in Queensland that is far from surprising; it would be uneconomic for all ships travelling to Brisbane to stop at Townsville.

The AEIS notes that, currently, some imported goods are landed in Brisbane and then transported by (environmentally less friendly) road or rail to Townsville. However, given the population distribution, it would be far worse environmentally to unload cargo in Townsville and then take it by road or rail to Brisbane! Furthermore, if necessary, it would be possible for a ship to make their first port of call in Brisbane, unload their cargo destined for Brisbane, and, on return to Asia, unload the remainder of its cargo in Townsville.

2.1 The increased duration of dredging

The length of time over which dredging will occur has blown out from already alarming 4 years (as per the EIS), to an unbelievable 10.5 years (as per the AEIS).

According to the AEIS (Table 29.1, at 29.2, p.3) this extraordinary increase is a result of a '*change in dredging methodology [with more use of mechanical dredgers] to minimise the reclamation footprint size*'.

⁴ 'Only' based on the fact that the Port sees the proposed 14-17% increase in maintenance dredging as 'modest', 'slightly increased' and 'not significant'.

The AEIS alleges that this reduction in the footprint will occur because the mechanical dredge will involve less ‘bulking up’ of the dredged material.

According to International Association of Dredging Companies,

Mechanical means are used for excavation – dislodging the material and then raising it to the water surface – in a way similar to dry land excavation methods. Mechanically dredged sediments are generally transported by barges. Cohesive sediments dredged and transported this way usually remain intact, with large pieces retaining their in-situ density and structure through the whole dredging and placement process.⁵

The question inadequately addressed by the AEIS in relation to the change in dredging methodology is, to what extent is the material to be dredged ‘cohesive sediments’?

Section 7 of the AEIS notes:

The surface layer of recent (in a geological timescale sense) seabed sediments generally consisted of approximately 60 to 70% silts and clays with some sand zones (i.e. a mixture of soft silty clay to clayey silt, with loose sand, silty sand and clayey sand also present). Shell fragments and organic materials commonly occurred in this layer.

It would appear that the change to the dredging method has more to do with the ease and rapidity (cost) with which the Port can handle the sea reclamation than it has to do with the sedimentation of Cleveland Bay.

2.2 The deepening of the channels

Table 29.1 of the AEIS states that, in comparison with the EIS, the access channels would be deepened to -12.8m LAT. (The EIS had the channels being deepened to -13.7m LAT).

However, Table 2.3 of the AEIS (AEIS, 2.4.7, p.24) gives the channel being deepened in Stage 3 of the proposed expansion to **-13.6 LAT**.

Where or not this difference is an error, a result of different units being used, or an indication that the channel will indeed be deepened requires immediate clarification.

⁵ Dredging: The facts <https://www.iadc-dredging.com/ul/cms/fck-uploaded/documents/PDF%20Publications/dredging-literature-dredging-the-facts.pdf>

2.3 The widening of the channels

The EIS claimed that the Sea Channel needed to be lengthened by 2.7km; deepened (to accommodate larger Panamax sized vessels) to an ultimate average dredged depth of -14.5 m [presumed to be -13.7 m LAT], with minor widening of the Platypus Channel near the outer harbour entrance. (EIS, Section A, p.66)

Crucially, according to the EIS:

There is no apparent economic driver to use ships larger than Panamax size on any trade through the port in foreseeable future, and it is proposed that the PEP be designed to accommodate the regular operation of large Panamax sized ships up to 70,000 to 85,000 DWT. The existing channels already handle ships of Panamax width, but will need to be deepened to accommodate the larger capacity (and therefore deeper draught) Panamax ships proposed for the new bulk trades. There is therefore no economic driver to widen until a particular trade (which cannot be forecast at present) is proposed that has a strong economic argument to use wider ships. (EIS, Section A, p.70)

Now, however, just two and a half years later, the AEIS claims that the width of the access channels needs to be increased from 92m to 180m tapering down to 120m
NOTE: These widths do not include the batters, which add another 26 metres in dredging of varying depth.

The AEIS (AEIS 21.2.3.6, p. 250) notes:

Trading ships, such as Panamax class type vessels, are built longer and/or wider than Handymax cargo vessels in order to access a trade through the Panama Canal. The common Panamax size vessel is generally 32.3 m wide, 225m long and with a laden draft of up to 14.5 m. As a result of the available dredged depth in the Port's access channels, these vessels can only transit the Port of Townsville during short high tide windows when they are fully laden.

and, at p. 259:

In lieu of the full deepening existing channels as proposed in the EIS, the design refinement of a widened channel will allow the Post Panamax vessels with a 43m beam access to Townsville.

The majority of the increase in capital and annual maintenance dredging would result from the channel widening. If the problem is access during low tides (and this is the basis for the hypothetical scenarios used in the AEIS) how does widening the channels overcome this problem? As is acknowledged in the AEIS

(AEIS 29.1), larger and wider ships have deeper drafts.

Recent discussions with Port staff now indicate that the reason for the increase in width is the increasing beam of ships, and safety.

The vessels anticipated to access the port under the AEIS design are a mere 10 metres wider than current vehicles – why then an increase of up to 180 metres?

As far as safety goes, this was not mentioned in the EIS or AEIS, presumably because over the ‘long period of design refinement’ and the long operation of the port, it was not seen as an issue.

What, in the words of the EIS (Section A, p.70 reproduced above), ‘*particular trade*’ with a ‘*strong economic argument to use wider ships*’ has been identified in the last 30 months? What does such a significant change between the EIS and the AEIS say about the forecasting ability of the Port? In another 2.5 years, will the Port decide that what is needed is something different again? Where is the research that supports this new design?

The AEIS (AEIS 29.1, p.1) notes that ‘*the dredging of the channel was required independently of the construction of any additional berths or land reclamation as it will itself provide a capacity increase for the Port to accommodate larger and wider ships (with a deeper draft)*’. [Emphasis added]

Without additional berths, is the massive and ongoing dredging program in this special location justified?

Finally, given the impossibility of lengthening and thus deepening the access channels to Townsville port because of its location in the GBRWHA and its proximity to the GBRMP, why is Townsville regarded as a priority port?

2.4 The increase in maintenance dredging

Table 5 ‘Summary of Historic Maintenance Dredging (In-situ Volume) and Future Dredging Requirements for Queensland Ports’ of the March 2016 Consultation Draft of the Queensland Maintenance Dredging Strategy (yet to be finalised), reports annual mean dredging at the Port of Townsville as 400,000 m³/year, with a maximum recorded amount of 815,000 m³ in any one year. (Somewhat surprisingly, the same source gives the predicted increase due to Future Projects as zero (0)).

The EIS (EIS 1.6.4) predicted a ‘net 25% reduction in the current annual

maintenance dredging volume'.⁶ [Emphasis added]

In stark contrast, the AEIS, with its radically changed design, states:

Due to the widened channel, maintenance dredging volumes are predicted to increase by 17% over the existing case for the Interim development stage (e.g. Stage 1) and by 14% over the existing case for the Ultimate development... [9+ years away]. (AEIS 23.3.1.1).

With an average annual maintenance dredging volume for the Port of 400,000m³/year, the variation in annual maintenance dredging between the two designs (a decrease of 25% compared with an increase of 14-17%) is a massive 166,000m³/year.

3. Effective demand for any expansion

Effective demand differs from demand in that it implies the demand will be realised, rather than just 'desired'.

NQCC contends that the responses to its (and others') concerns about the need for the project have not been adequately addressed. The extreme paucity of the economic analysis (notably the Trade Analysis) undertaken for the EIS was highlighted by NQCC's submission to the EIS; the validity of the criticism has been vindicated by events. The issue has not been addressed in the AEIS, which still relies on unsubstantiated comments and forecasts, with the vague summary comment (AEIS, 29.p.8)

In the short term the PEP will provide opportunities for new trades to utilise the Port, including larger cruise ships that are currently restricted from visiting Townsville. In the longer term the Project continues to support the development of Northern Australia as one of Queensland's priority ports.

Of particular relevance to Townsville was the launch this year of the **Asia Australia Consortium**.

The Asia Australia Consortium, known as A3, will launch three dedicated services — the Northern Express, Central Express and Southern Express — connecting 10 major Northeast Asia ports with Sydney, Melbourne and Brisbane in Australia.⁷

⁶ In the same section, it further stated: *Sediment re-suspension processes within the bay are significant and occur over a broad scale. The relative contribution of additional dredge material placement at the DMPA when compared to [sic] baywide re-suspension processes is considered to be minor.*

⁷ http://www.joc.com/maritime-news/trade-lanes/asia-australia/lines-launch-new-asia-australia-services-trade-reorganizes_20160711.html

Townsville does not feature in any of these dedicated services.

It is understood that A3 has recently purchased ten New Handymax ships. These ships can (and do) already berth at Townsville.

3.1 Levels of use of the Port

NQCC's concerns about the lack of the demand for the expansion (including increasing the number of berths from 9 to 15) because of the current under-use of the Port, have not been assuaged. We note that even the Queensland Department of State Development questioned the need for expansion in its comments on the EIS; and that, at AEIS 20.2.1, Maritime Safety Queensland (MSQ) noted 'no demonstrated evidence of increased shipping in recent years'.

Usage by BITRE's standard

The AEIS provided a long and tortuous argument as to why berth occupancy is not a good measure of port utilisation – and attempted to demolish (at least in the case of Townsville) the Bureau of Infrastructure, Transport and Regional Economics (BITRE) statement that, 'a berth utilisation at or exceeding 80 per cent is an indication of a berth close to, or at, full capacity'. (AEIS, 21,2,1)

Demolishment of the argument would have been a good idea as Townsville port utilisation in 2014/15 was just 40.2% - just half of BITRE's indication of 'full capacity'. By the official Australian measure, PoTL is only half-full.

The AEIS (21.2.1, p.243) rejects the use of berth occupancy as the measure of port utilisation, explaining:

*While the historical berth utilisation figures may suggest additional capacity is available, berth utilisation is only part of the picture. Rather, it is **port performance, reliability and economic throughput that are most suitable indicators of port capacity and therefore basis for increased capacity rather than historical berth utilisation statistics.**⁸ [Emphasis added]*

Usage by the Port's standard

Regardless of BITRE standards, even by the *Port's own definition of utilisation* (which provides an optimum berth occupancy for each of the nine berths, ranging from 65% for berth 2 to 35% for berth 8), port performance is poor. AEIS data (AEIS, Section 21, Fig 12.1) show that only *three* of the Port's nine existing berths met the Port's own 'optimum berth occupancy' one or more times over the eighteen years from 1997/98 to 2014/15.

⁸ Unfortunately, these additional parts of the picture are not discussed, other than an explanation as to how some berths have not been available over recent years as a result of upgrades. Presumably, when these upgrades are completed bottlenecks will decrease, further lessening the demand for the expansion.

Indeed, over the 18 financial years, across the nine berths (i.e., 18 years x 9 berths), the Port's 'optimum berth occupancy' was achieved on only 33 (20%) of the 162 occasions. By the Port's own standards, there is no rational argument for an increase in the number of berths – and longer ships can use the existing berths.

Cessation of nickel trade

As is noted in the AEIS, Queensland Nickel has ceased (and is widely regarded as highly unlikely to resume) operation. Queensland Nickel accounted for over 28% of all trade at the Port. This cessation of the nickel trade will further increase the failure to achieve optimum berth occupancy (in the Port's own terms). The AEIS claim that berth 2 is virtually unusable for anything other than nickel is hard to believe and not supported by Port records.

Use of exaggerated scenarios

In attempting to justify the need for expansion, the AEIS provides various 'scenarios' showing the impact of hypothetical 'disruptions to vessel access' to the Port triggered by inadequate channel depth.

Given the very low number of times when the Port is at 'optimum' capacity and the number of occasions when vessel access is 'disrupted', the scenarios grossly exaggerate any inadequacy of the current port.

The AEIS (21.2.5, p.258) states that, currently, access to the port as a result of tidal restrictions is limited for 10% of vessels seeking to berth at the Port. In comparison the three hypothetical scenarios are based on tidal disruptions of 29%, 70% and 87%.

These grossly exaggerated scenarios are then used to come up with (grossly exaggerated) figures for the economic and employment impacts on the region of not expanding the port.

All the scenarios presented in the AEIS (Table 21.4) relate to disruptions caused by tidal conditions. Given this, why is the AEIS decreasing the intended deepening of channels? No amount of widening will compensate for lack of necessary depth.

Finally, even these scenarios are based on theoretical and widely abused and disputed multipliers from Input/Output models, using tables between 8 and 20 years old.⁹

In other words, little or no credibility can be attached to the regional economic impacts provided under the three hypothetical scenarios.

⁹ See, for example, Gretton, P. 2013 *On input-output tables: uses and abuses*, Staff Research Note, Productivity Commission, Canberra; <https://espace.library.uq.edu.au/view/UO:11078/DP2620ct99.pdf>. Note, the Federal and State agencies ceased developing Input: Output tables in 2008/9 and 1996/97 respectively. Thus the modelling for the hypothetical scenarios of port disruption are based on data up to two decades old.

Future expansions?

The AEIS implies further expansion (AEIS, 21.2.5 p.258):

The emergence of major export-based refineries in Asia operating on a lower cost base has transformed the industry resulting in the impending closure of the Bulwer Refinery in Brisbane (not an event forecast in the trade scenarios modelled for the EIS), there is an intention by fuel companies to use larger, long range Aframax-sized ships (LR1 and LR2s) to transport fuel from southeast Asia to Australia, including Port of Townsville. These fuel ships are wider and deeper than the forecast bulk trade ships (a beam of up to 44 m and draught of up to 15 m). Access to the Port of Townsville by these ships limited due to tidal restrictions and would still have to be partially loaded. To increase options and improve access to this trade the channel would first have to be widened, then deepened’.

If further expansion is anticipated at the Port, it should have been announced and assessed in the EIS and AEIS, in particular in the Cumulative Impact Assessment (the whole purpose of which is to consider the entire impact of a proposal).

Furthermore, if lengthening (and thus depth) of the access channels is restricted by the proximity of the GBRMPA, how will ships with a draught of up to 15m be able to enter Townsville? What future expansion is possible without a totally unacceptable intrusion into the GBRMP and GBRWHA?

3.2 Cargo

In another example of the ‘turn-arounds’ from the EIS, the AEIS now denies that the original rationale for the proposed expansion was to allow for nickel, magnetite and coal. But there is no denying that the EIS (EIS, B19.1.2) under the heading ‘Demand for Port Capacity’, stated:

“Port of Townsville Limited (POTL) has prepared trade forecasts to the 2039/40 fiscal year (Appendix T1), which underpin the need for the PEP.... The forecasts are based on a detailed assessment of individual resource projects, particularly in nickel, magnetite, copper, coal, and fertiliser, being developed by several major resource companies. The forecasts summarised are supported by a detailed mine-by-mine analysis of port capacity needs.”
Section B.19.1.2

Trade is expected to be around 33.4 Mtpa by 2024/25, which is three times the current volume. By the time trade reaches this level the components of total port trade are expected to be:

- coal exports 24%*
- ☒ *nickel ore imports 24%*
- ☒ *magnetite exports 16.5%*
- ☒ *fertiliser exports and fertiliser component imports 10.5%*
- ☒ *other mineral concentrate exports (e.g. copper, lead, zinc, cobalt) 9.5%*
other imports and exports (e.g. general cargo, agricultural, general trade, etc.) 15.5%. (p.729)

Notwithstanding this clear statement, the AEIS (21.2.6, p. 262) denies ever having focused on these commodities, noting:

*The impact assessment undertaken through the PEP EIS focuses on altering the land and sea footprint of the port to enable the port to sustain the long term viability of the communities in North Queensland, and as such **do [sic] not focus on the specific individual cargoes that may be handled in the future.** [Emphasis added]*

Now, according to the AEIS, '[T]he proposed expansion to the Port of Townsville is required to accommodate medium and long-term future growth in trade volume over a planning horizon to 2040 and beyond, and to ensure that the port remains attractive to shippers as the global fleet increases in size'. (AEIS 21.3)

This vague rationale apparently necessitates a whole new design that is in direct contrast to that outlined in the EIS, which was developed after a 'long period of design refinement'. Is there any conclusion that can be drawn other than the Port has poor ability to project future demand or is just intent on expansion *per se*?

The AEIS (21.2.5, p.260) states that the proposed wider channel will cater for:

- expansion of the containerised cargo (supported by a larger regional base, as well as expansion in the range of products being containerised)
- fuels (driven by loss of Australian refineries and a need to cater for the longer range vessels i.e. via LR1 and LR2s out of Asia)
- car vessels (loss of Australian manufacturers and increase in population continues to drive an increase in the vehicle imports)
- Opportunistic use by the leisure cruise industry.

An examination of the references used in the preparation of the AEIS (AEIS App C4) indicate just three references that appear to apply to trade forecasts and to the impact of the enlarged Panama Canal on shipping. In other words, there is, as in the EIS, insufficient evidence to support the claimed demand and need for expansion.

Containerisation

*Widening the Oceans*¹⁰ (as referenced in the AEIS) notes:

In 2015 new locks will open on the Panama Canal, allowing for “post Panamax” vessels to pass, an average 25 per cent larger than those currently able to use the canal. In preparation for this WWL will be receiving eight post Panamax vessels between 2014 and 2016.

It would appear that some the smaller of these new vessels could already berth at the Port of Townsville, if not at all tides.

In relation to the containerised trade, BITRE¹¹ (as referenced in the AEIS) notes a mere 5.1% increase in such trade over the 20 year period from 2012/13 to 2032/33.

Also in relation to containerised trade, go-maritime.net, in its online report “*Future Trends in the Shipping Industry*” (undated but based on research funded under the *European Union Seventh Framework Programme FP7/2007-2013 grant program*) states:

A couple of years ago everyone was targeting containers and container trade. It seemed to be the only acceptable way of transporting cargo. What we see today is that slowly but surely shipping companies are once again reinvesting in specialised ship types.

In relation to non-containerised trade BITRE¹² (as referenced in the AEIS) notes that total non-containerised trade through Australian ports is projected to increase by just 3.9 per cent a year over the next 20 years.

Servicing the cruise ship tourism industry

One of the arguments used in an attempt to justify the expansion of the Port is the fact that some (26%) of the 54 cruise ships ‘active in the region’ are too large to be able to berth at Townsville.

Regardless of what ships are or are not ‘active in the region’, the fact remains that 74% of these ‘active’ ships (that is, 40) are currently able to access the Port of Townsville. That only six of these so far plan to visit over the period 2017-19 is likely to reflect limited demand for Townsville visits rather than the feasibility of berthing.

¹⁰ <http://www.2wglobal.com/news-and-insights/articles/features/Widening-the-oceans/#.WAbhOIUR21I>

¹¹ https://bitre.gov.au/publications/2014/files/report_138.pdf

¹² https://bitre.gov.au/publications/2014/files/report_138.pdf

As the AEIS (p.263) itself notes:

Townsville does not regard itself as a tourist destination and most tourism 'product' has a strong dependence on locals. Much of the accommodation available is also focussed on business visitors or inter-regional visitors. Much of Townsville's international visitation is stopovers on east coast road trips.

Given this, and despite increased efforts by the PoTL to attract 'white' ships, it is considered highly unrealistic to expect, or cater for, ships of the size and 'status' of the big Cunard and similar vessels (such as the Queen Mary 2 or Queen Elisabeth, two of the 26% or cruise ships too big to access Townsville port) – especially when this is at the expense of the World Heritage listed GBR region.

Finally, in relation to the leisure cruise industry, BITRE¹³ (as referenced in the AEIS) notes that the total (inbound plus outbound) number of cruise ship passengers through Australian ports is projected to increase by just 1.8 per cent a year over the next 20 years. It is likely that this demand will focus on many cities before Townsville. It is widely known that cruise ships contribute little to the economies of the ports they visit.

The AEIS notes that in relation to the alleged increase in trade of fuels and cars through Townsville, there appears to be no acknowledgement of the changes in fuel and car use over the next 20 years in response to worsening climate change.

3.3 Efficiencies at the Port

The AEIS notes (S. 21.2.1, p.243) that, in response to the EIS, *'The Department of State Development, Infrastructure and Planning also identified the need to consider opportunities for improved efficiencies as an alternative to accommodating some of the growth at the port'*.

In response the AEIS (S.21.2.2.1, p.246) bluntly states:

Whilst POTL continuously seeks to improve efficiencies and work within the existing port, to minimise capital costs, the proposed expansion to the Port of Townsville is required to accommodate medium and long-term future growth in trade volume over a planning horizon to 2040 and beyond.

There appears to be no further attempt by the Port to respond to the Department's 'identified need', or indeed to discuss how increased efficiencies (in for example,

¹³ https://bitre.gov.au/publications/2015/files/asf_2013_14.pdf

loading, freight readiness) could decrease the need for expansion.

This, despite its statement: *'... it is port performance, reliability and economic throughput that are most suitable indicators of port capacity and therefore basis for increased [increasing?] capacity rather than historical berth utilisation statistics'*.

3.4 The business case for the proposed expansion

Extraordinarily, the business case for the proposed expansion is STILL to be done. Given how far advanced apparent plans are, and the amount of public money that has been spent coming this far, there has been no assessment of the viability of the proposal. This is also despite the fact that Reef 2050 requires all proponents of new dredging works to demonstrate their project is commercially viable.

As NQCC stated very strongly in its submission to the EIS, the economic analysis to date has been of exceedingly poor quality, dependent on unsubstantiated claims about future demand and lacking any indication of the total (monetary and non-monetary, business and social) costs and benefits of the proposal.

This is more surprising still given that the proposal is for a major coastal development involving massive dredging in an ecological hotspot in the already highly fragile and suffering Great Barrier Reef World Heritage Area and Great Barrier Reef, which is currently threatened by coastal development and dredging, and under review from UNESCO.

Enquiries of the port since the release of the AEIS have identified that no funding model has been identified for the proposed expansion. It appears to be anticipated that users would pay for the new berths. Presumably, the remainder of the projects (e.g. channel widening, deepening and lengthening of the channel and associated port infrastructure) is to be billed to the tax- and rate-payer.

Without a rigorous and totally independent analysis of the case for this proposal, damage will be done to the GBRWHA for the sake of limited or no benefit.

It is not a case of 'build it and they will come'.

The expanded port could end up as yet another (but far bigger and more expensive and damaging) Townsville white elephant – alongside the cruise ship terminal, the V8 building infrastructure, the opening of the Flinders Street mall, the Magnetic Island Harbour and, possibly, down the track, the Townsville stadium.

4. Dredge modelling

Turbidity of Magnetic Island waters

In response to concerns from respondents to the EIS about increases in muddiness (turbidity) affecting Magnetic Island, the AEIS notes (in apparent agreement):

The numerical modelling results indicate that accumulation of dredged sediment is unlikely to occur on Magnetic Island beaches due to the tendency for currents and wind waves to generate sufficiently high bed shear stresses to keep fine sediment in suspension. (AEIS 5.2.4, p. 46)

In contrast is a statement made to the Senate Inquiry into Reef Management by the CEO/Chair of GBRMPA, Russell Reichelt, on 23 July 14. In his opening statement, Dr Reichelt said:

On the issue of disposal of dredge spoil, the available science does list it as a significant risk in a local setting. It does change the regions up to perhaps 10 kilometres away from the port. That is visible if you wander out and look at the Townsville port and have it explained to you where the mangroves and mud banks came from on southern and western Magnetic Island, for instance, or the expansive mud flats at Cairns. There is no question that they have a significant local effect.

On the issue of maintenance versus capital dredging, maintenance spoil, which is finer, is more like to spread far and wide than is capital dredge spoil.

This is also true when spoil is dumped at 'approved' spoil management disposal areas in the ocean, about 4km off the NE coast of Magnetic Island.

The impact of the dumping of dredge spoil on the waters of Magnetic Island has long been recognised:

The most likely future impacts will result from remobilisation of dumped material from the dump site. This may take place either as chronic leakage under low to medium-level hydrodynamic conditions or as events under major storms or cyclones. In the area of the dump site and for some distance to its SW, SSCs (suspended sediment concentrations) are likely to be raised above natural levels for a considerable period of time (weeks to years).

In some situations, sediment deposits which [sic] are not in equilibrium with the hydrodynamic regime have the potential to remain over long periods of time due to 'armouring' of the surface...

However, post-dredging cores taken at the dump site suggest that no armouring of the dumped material had occurred probably because the dumped material contains little coarse-grained material. Further, the natural infauna of Cleveland Bay thoroughly mixes the surficial sediments to depths of

ca. 0.3m. There is thus the likelihood of chronic leakage of sediment from the dump site for a period of years, and for more intense erosion events by the large swell generated by cyclones.

The potential consequences of chronic leakages and intense erosion events are unknown. Some sediment is likely to be flushed from the bay, but some may be deposited in environmentally sensitive areas. Subtidal flats containing seagrass and mangrove swamps are the major areas of sediment accumulation in Cleveland Bay.¹⁴

Despite the new modelling undertaken for the AEIS, which estimates what will happen to the spoil in theory, anecdotal evidence from long-term residents of the island contravenes many of the recent claims. Furthermore, models, are vulnerable to minor ‘tweaks’ and have changed considerably over time – with each new model used in EISs seemingly decreasing the impact of dredging on the environment.

Of relevance is the modelling done for the major 1993 capital dredging process in Cleveland Bay, which showed the dredging having very significant impacts on the bays of Magnetic Island. (See Appendix B)

It is more than disconcerting to read (AEIS 29.3.1.3) that *‘It is very important to note that the recovery times outlined for the various zones should be considered as indicative only...’*.

Furthermore, the increase in maintenance dredging (see 2 above), will only exacerbate the damage to Cleveland Bay and Magnetic Island in particular.

Finally, there has been no attempt to comply with the Reef 2050 aim of examining ‘opportunities for beneficial reuse of dredge material or on-land disposal from maintenance activities’.

5. Use of dredge spoil in reclamation

As noted above, NQCC is aware of (indeed, was instrumental in delivering, and supports) the legislative ban on dumping of capital spoil in the GBRWHA – already implicit in the long-standing but long-ignored 1981 *Environment Protection (Sea Dumping) Act* – and understands that this requires capital dredge spoil to be beneficially used.

According to the AEIS (7.2.3, p.116) *‘... the revised project design now includes placement of all dredge material in reclamation, sediment testing (including a full*

¹⁴ Townsville Port Authority Capital Dredging Works 1993: Environmental Monitoring Program Chap.9 Data Interpretation Larcombe and Ridd p190 -191.

sediment chemistry assessment) will still be undertaken to inform how the material will be managed in the reclamation'.¹⁵

The AEIS makes it clear that *'Coastal sediments throughout Cleveland Bay also have the potential for acid generation...'* (AEIS 7.1).

The AEIS (3.1) confirms that, *'the Holocene sediments from the dredge and reclamation area... display characteristics typical of potential acid sulfate soils (PASS)'*.

AEIS Table 3.4 reveals that over 2 million cubic metres of Holocene sediment will be dredged and use to create reclaimed adjacent to the GBRWHA waters.

NQCC is fully aware of the disastrous leaching of ASS that occurred at Gladstone, and is concerned that no Acid Sulphate Management Plan has yet been developed for the proposed PoTL expansion.

It is further seriously concerned by the AEIS statement that:

Dependent upon the level of indicated risk, management measures will be implemented which may range from groundwater monitoring to re-excavation and lime treatment of these materials to ensure that hotspots are avoided. Whilst this method of treatment is also effective in managing PASS, due to high labour and cost associated with this approach, it is not preferred.

It is essential that, if the expansion proceeds, 'best practice' be employed at all times and with respect to all operations, regardless of cost.

6. Underwater noise

NQCC commented on the inadequacy of assessment of the impact of underwater noise undertaken for the EIS (and on which conclusions were presumably drawn), giving six specific issues as examples.

The response in the AEIS is considerably less than adequate. It notes that:

(1) A Marine Megafauna Management Plan *'will be developed in conjunction with an appropriately qualified underwater noise consultant, and will include the implementation of contemporary management measures'*, and

¹⁵ As mentioned earlier in this submission, the EIS states, *'It would not be practical to re-use the soft marine silt on land', and: ... onshore re-use of the remainder of dredged material [the soft marine silt] is considered not to be a viable option... Handling and stockpiling onshore would also result in significant management issues and potential environmental effects... 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, nor is the material likely to be utilised effectively.*

(2) 'Project activities during the construction phase (e.g. vessel traffic movements, piling, dredging) could therefore interfere with larval fish settlement behaviour... The use of generic 'seasonal windows' to mitigate impacts from construction activities may therefore protect some but not all species. On this basis there are no practical measures that can mitigate this impact'.

This section then refers to two fish species – one that does not have a larval stage and the other that does not pup in Australian waters.

The AEIS makes no mention of the fact that, with the new design, the underwater noise associated with dredging and construction will last not for 4 years (as proposed in the EIS) but for 10.5 years.

The 'too bad, we can't do anything about it' approach of the EIS is maintained, despite the fact that underwater noise will continue for 2.5 times longer under the 'revised design' than under the design that was presented in the EIS.

No doubt the fishers of the Townsville area (the city with the greatest concentration of leisure craft in the State) will be concerned to hear about the impact of the project on larval fish – especially given that the dredging period has blown out from 4 to 10.5 years.

And the impact will not just be felt by fishers – the disruption to the ecosystem will have implications for the ecological health of the region and beyond in terms of the food chain.

Furthermore, the fact that projects can seek approval while failing to provide essential plans is unacceptable, and another example of the failure of the EIS process.

7. Loss of and damage to habitat

As the AEIS (8.1, p.121) notes, Cleveland Bay boasts,

a wide diversity of marine habitat types including intertidal beaches, mangrove forests, saltmarshes, intertidal shoals, subtidal soft sediment habitats, rock walls, coral reefs and rocky shores, One of the largest seagrass meadows in the broader region, coral communities of high biodiversity significance, particularly those around Magnetic Island, habitats for a wide range of fish and shellfish species of direct economic significance, significant feeding areas for marine turtles, dugongs and dolphins, which are listed as vulnerable [NOT 'threatened', as the AEIS reports at 8.1] or migratory, under

Commonwealth and/or state legislation, and habitat for a range of other threatened or otherwise listed marine megafauna species, including whales and sharks protected under the Environment Protection and Biodiversity Act 1999.

The proposed expansion will deliver a direct and permanent loss of habitat due to the 52% increase in the area of sea reclaimed.

A November 2015 report¹⁶ found that: *'The Port of Townsville entrance is a particularly important foraging habitat for snubfin and Humpback dolphins, at least during November' and 'The reliable presence of snubfin dolphins using the Port Entrance makes this site regionally important as no snubfin dolphin sightings have been recorded north of Townsville during the recent JCU surveys'.*

Despite this, despite status of the snubfin and humpback dolphins having been downgraded to 'vulnerable', despite the acknowledgment that these species are under increasing threat from human activities, and despite the proposed large increase in the destruction of important habitat under the AEIS proposal, no change has been made to the assessed impact of the development on these species.

Similarly, despite the increased physical impact of the expanded project on corals, seagrass, and the GBR, the Impact Assessment undertaken for the AEIS shows a lower impact than that for the EIS.

The increase in the amount of maintenance dredging (see 2 above) will only exacerbate the stresses on this important habitat.

8. Offsets

NQCC takes this opportunity of reiterating its rejection of offsets as a way of mitigating and enabling environmental damage. Basically, offsets rely on the 'if you let me damage and/or destroy this area, I promise I won't mess up that one' argument – a promise that is all too easily broken over time, and which results in net habitat loss.

The AEIS asserts that, despite the increase in sea reclamation, despite the increase in capital dredge spoil, despite the blow-out in dredging from 4 to 10.5 years, and despite the increase in maintenance dredging, there is no need for increased offsets.

The reason for this is that, according to the AEIS, unmitigated risk under the EIS was over-calculated. Indeed, the AEIS goes so far as to say that the EIS was so

¹⁶ Beasley, I, 2015, 'Looking for Dolphins and Dugongs in Cleveland Bay, Townsville', Project Report, James Cook University.

benign that no offsets were required.

The AEIS states that the commitment to the ('unrequired') offsets of the EIS will be met, but they will be regarded as offsets 'banked' against future unmitigated damage!

Given the comparison of risks between the EIS and the AEIS (see Table 1 in the following section on Cumulative Impacts), this argument is not adequately substantiated. It beggars belief that, given the size and impact of the project, no significant damage will be done to the GBRWHA.

8.1 Cleveland Bay Fish Habitat Area (FHA) as an offset

In response to the EIS chapter on offsets, NQCC focused on what it saw (and still sees) as the ludicrous claim that a \$142 million offset (accounting for 93% of required offsets) can be obtained by the Port rescinding a previous objection to the inclusion of seabed adjacent to the Ross River channel (*over which it holds no rights*) being included in the existing Cleveland Bay FHA.

The Department of National Parks, Sports and Racing states that, '*A declared fish habitat area (FHA) is an area protected against physical disturbance from coastal development, while still allowing legal fishing*'.¹⁷

To claim that declaring an area of water in a Fish Habitat Area is adequate compensation for permanent loss of water habitat elsewhere (especially when that habitat was already protected as part of a World Heritage Area) is illogical.

Given that the entire GBRWHA is protected at the highest level, it is questionable that FHA status gives any further protection. Indeed, an FHA provides less protection than do some of the GBRMP zones.

8.2 Calculation of the FHA offset benefit

The AEIS reveals that:

... of the 1240 ha that is proposed to be converted to FHA, about 620 ha of this area occurs within the existing Port Exclusion Area of the Great Barrier Reef Coast Marine Park at the mouth of the Ross River (See Figure 27.1).

and

Inclusion of this 620 ha area as a Fish Habitat Area provides additional conservation planning controls over the area and precludes future dredging or other tidal works in the area. (AEIS, 27, p.318)

¹⁷ <http://www.nprsr.qld.gov.au/managing/habitat-areas/>

This makes clear that the area of sea 'contributed' to the FHA by the Port is 620ha not 1240 ha.

That would halve the value of the offset, reducing its purported value from \$142m to \$71m.

Furthermore, as the area of sea destroyed by way of reclamation has increased from 100 ha to 152 ha, the ratio of offset to area lost (620: 152) does not meet the 5:1 ratio sought by the new Fisheries Queensland Offset Policy FHMOP005.2.

8.3 Offsets for dolphin habitat

The AEIS (p.329) notes, *'the extension area is likely to include marine areas that are used as habitat by threatened inshore dolphin species as well as areas traversed by dugong and turtles to nearby permanent seagrass meadows in south-eastern Cleveland Bay'*.

The revised design involves an increase in habitat loss from 100ha to 152ha.

Despite this, the AEIS does not resile from its EIS comment, viz, *'[C]onsistent with the findings in the EIS, a significant residual impact to marine megafauna and their habitat is not predicted to occur from the revised PEP proposal and an offset for this matter is not required to be imposed.'*

This is not accepted. It also noted that The Department of Environment and Heritage Protection (DEHP) highlighted the suitability of offsets for dolphin core habitat.

8.4 Offsets related to dredging

The AEIS notes that, 'Due to the widened channel, maintenance dredging volumes are predicted to increase by 17% over the existing case for the Interim development stage (e.g. Stage 1) and by 14% over the existing case for the Ultimate development... [9+ years away]. (AEIS 23.3.1.1).

In comparison, the EIS claimed a 25% reduction in maintenance dredging.

The AEIS (27.2.3) notes:

... the increase in annual maintenance dredging required to maintain the improved channels and berths associated with the PEP is a modest increase for the addition of 6 operational berths on existing annual maintenance dredging volumes. [Emphasis added]

and

*This is **not considered to represent a significant impact** over the current impact from maintenance dredging...* [emphasis added]

As a result of these apparent opinions (very likely to be refuted by those, especially on Magnetic Island, affected by such increase, and by water quality experts), the AEIS states, *'On the basis of these predicted residual impacts (none of which are considered significant), an additional offset for operational phase impacts from the PEP is not considered as required'*.

The average annual maintenance dredging for the Port of Townsville is 400,000 cubic metres (Source). A 17% increase is the equivalent of 68,000 cubic metres. A 14% increase is 56,000 cubic metres.

To describe such an increase as 'modest' and 'not significant', especially in the biological hotspot that is Cleveland Bay in the Great Barrier Reef World Heritage Area, and when the 2015 Report Card on the Reef, conducted prior to the 2016 major bleaching and death of much of the Great Barrier Reef is regarded as irresponsible.

Finally, the comment, *'the increase in annual maintenance dredging required to maintain the improved channels and berths associated with the PEP is a modest increase for the addition of 6 operational berths on existing annual maintenance dredging volumes'* (AEIS, 27.2.3), demonstrates a lack of understanding of offsets – they are not a form of cost/benefit, they are absolute not 'relative'. Offsets relate purely to damage to Matters of National Environmental Significance and Matters of State Environmental Significance.

9. Cumulative Impact Assessment

Much of the Cumulative Impact Assessment (CIA) is, as noted at AEIS 25.2, p.283, dependent on material presented elsewhere in the AEIS, particularly Section 6 (Marine Water Quality) and Section 8 (Marine Ecology).

Of particular relevance are the Impact Assessment Summaries presented at EIS, Table B.6.20 and at AEIS E, Table 8.4.

A comparison of the 'conclusions' of the two Impact Assessment Summaries is provided in Table 1 (below).

Surprisingly, despite the very significant changes between the project as presented in the EIS and as presented in the AEIS (especially with respect to the amount, type

and duration of dredging and the extent of sea reclamation), the residual risk is, in the great majority of cases, the same.

In some cases, it is higher (but note, there is no increase in the offsets offered up in the AEIS.)

In some cases, it is lower, which is hard to believe given the increased amount and duration of dredging.

In the light of Table 1, NQCC rejects the ‘findings’ of the CIA (and the ‘offsets’) conclusions presented in the AEIS.

Table 1: Comparison of Impact Assessment Summaries of the EIA and the AEIS

(Residual Risk is the risk after assessment of magnitude of impact, Likelihood of Impact and mitigation)

| Element | Residual Risk (EIS) | Residual risk (AEIS) | Comment |
|---|---------------------|----------------------|--|
| Impacts on seagrass | | | |
| Temporary loss of ephemeral deep-water seagrass | Low | Not addressed (N/A?) | AEIS does not assess DMPA where deep-water seagrass is assumed to be |
| Turbid plumes leading to temporary loss of nearshore seagrass around Magnetic Island and western Cleveland Bay | Low to medium | Negligible to Low | AEIS refers only to temp loss or stress along E and S of MI. Note: no change despite increase in amount and duration of dredging. |
| Turbid plumes leading to temporary loss of nearshore seagrass around eastern Cleveland Bay | Low | Not addressed | |
| Impacts on corals | | | |
| Coral stress and/or mortality, and detectable changes to community structure | Medium | Negligible to Low | AEIS does not refer to detectable changes to community structure Note: no change despite increase in amount and duration of dredging. |
| Direct loss of reef habitat due to construction and dredging | Low | Not addressed | |
| Impacts on soft sediment habitats and invertebrate communities | | | |
| Turbid plumes and sedimentation leading to temporary, detectable changes to benthos | Low to Medium | Medium | Note: virtually no change despite increase in dredging amount & duration |
| Removal of habitat and fauna through reclamation (irreversible) and capital dredging temporary) resulting in detectable impacts to soft sediment communities in the | Medium | Medium | Note: no change despite increase irreversible reclamation and more dredging over a wider area and longer period. |

| Element | Residual Risk (EIS) | Residual risk (AEIS) | Comment |
|--|----------------------------|-----------------------------|--|
| wider Cleveland Bay area and/or significant effects to GBRWHA values | | | |
| General disturbance and degradation of benthic habitats in the harbour basin through day to day port operations (maintenance dredging, stormwater discharges, spills etc.) leading to changes in benthic communities in basin area and immediate surrounds | Medium | Medium | Note: no change despite increase in amount of maintenance dredging. |
| Changes to hydrodynamics and morphology due to operation of new harbour facilities and channels leading to changes in benthic communities in basin area and immediate surrounds | Medium | Medium | Note: no change despite increase in amount and capital and maintenance dredging. |
| Loss of benthic fauna due to dredged material placement in long-term changes to community structure in and directly adjacent to DMPA | Low | N/A | AEIS does not involve sea dumping |
| Impacts of hard substrate | | | |
| Expansion of rock wall habitat associated with the new harbour facilities | Positive benefit | Positive benefit | |
| Impacts to marine megafauna | | | |
| Light spill from construction plant and port facilities leading to disorientation of hatchlings or nesting adults | Low | Low | |
| Increase in rubbish production increasing the risk of entanglement and/or ingestion of marine debris by turtles and marine mammals | Low | Low | |
| Increase in noise leading to marine fauna temporarily avoiding affected area (displacement) | Low | Medium | |
| Injury/mortality to marine megafauna (turtles) resulting from the use of dredge plant | Low to Medium | Low | Note: no change despite increase in amount and duration of dredging. |
| Loss of food resources and habitat as a result of construction and port facility operation leading to displacement of marine megafauna | Medium | Medium | No change in residual risk despite the fact the an extra 52 ha of megafauna habitat would be removed |

| Element | Residual Risk (EIS) | Residual risk (AEIS) | Comment |
|--|----------------------------|----------------------------------|--|
| Increased potential for hydrocarbon or other contaminant spill from vessels or on-site facilities, potentially leading to direct effects to marine megafauna or their prey (construction, operation) | Medium | Medium | Note: no change despite huge increase in duration of dredging. |
| Increase in vessel traffic during construction phase potentially leading to an increase in vessel strike risk or habitat disturbance due to prop wash | Medium | Medium | Note: no change despite increase in duration of dredging. |
| Impacts on fisheries production | | | |
| Loss of fisheries habitat associated with reclamation (irreversible) and dredging activities (temporary) resulting in reduced fisheries production | Low | Medium | |
| Displacement of economic species due to construction related disturbance resulting in reduced fisheries production | Low | Medium (local) Low (regional) | |
| Increased potential for hydrocarbon or other contaminant spill from vessels or on-site facilities, potentially leading to direct effects to economic species or their prey (construction, operation) | Medium | Medium | Note: no change despite increase in amount and duration of dredging. |
| Marine pests | | | |
| Increased potential marine pest Introductions | Low to Medium | Medium | |
| Impacts to GBR | | | |
| Deepening of the portion of the Sea Channel in the GBRMP leading to detectable changes to benthic habitats and communities in the wider GBRMP | Medium | N/A | No extension into GBRMP |
| Dredge plume impacts to marine ecology in GBRMP | Low | Negligible to Low | Note: no change despite increase in amount and duration of dredging. |
| Impacts to FHA | | | |
| Dredge plumes leading to loss of seagrass, and subsequent reduction in the abundance of economic species supported by the FHA | Low | Low | Note: no change despite increase in amount and duration of dredging. |
| Impacts to GBRWHA values (marine ecology) | | | |
| Significant changes to natural values supporting the outstanding | Medium with offsets | Medium | |

| Element | Residual Risk (EIS) | Residual risk (AEIS) | Comment |
|--|---------------------|----------------------|--|
| universal value of the GBRWHA. | | | |
| Impacts on Ramsar site | | | |
| Dredge plumes leading to loss of seagrass, and subsequent reduction in the abundance of marine megafauna supported by the site | Low to Medium | Low | Note: no change despite increase in amount and duration of dredging. |

As can be seen from the above table, two important impacts were not re-assessed at all for the AEIS.

Furthermore, despite the major increases in amount and duration of dredging in the AEIS compared with the EIS, the impact on corals, seagrasses, the GBR and megafauna were estimated to decrease.

Unbelievably, the impacts on benthos, noise, fish habitat, fish production and marine pests were estimated to decrease. This is in direct contrast to conclusion drawn elsewhere in the AEIS.

And despite the changes to the project, 11 criteria were found to be unaffected.

Finally, despite all this no changes to offsets were made in the AEIS.

Again the CIA does not consider the ongoing (and increased) maintenance dredging that would be a direct result of the project. This is in conflict with the concept of CIAs.

Similarly, the comment *'The impacts predicted by the PEP are generally considerably less than impacts occurring from other stressors'* (AEIS 29.2, p. 13), demonstrates misunderstanding of the concept of CIA, under which a small marginal impact from any source can tip the system over into failure.

10. Reactive Monitoring Program

In response to the EIS, NQCC commented that the reactive monitoring sites for the coral reef monitoring appeared to be located at the tips of headlands. This would be inappropriate because both sediment deposition rates and coral occurrence would be low at these points. We noted that sites must be in the bays (rather than at the headlands), and the monitoring must be conducted by an independent body.

These issues do not appear to have been addressed in the AEIS.

11. Closing statement

The AEIS has contributed nothing to the 2013 EIS beyond a completely different design that fails to address the major alleged problem with the port (channel depth).

Like the EIS, the AEIS fails to justify any real need or effective demand for the proposed expansion. Like the EIS it appears to be based purely on a wish to 'get bigger', to emulate ports in cities as big as Brisbane and Sydney.

This wish overlooks both the differences in population and hinterlands of these ports, and the international importance of the GBRWHA region (in which Townsville is located) and the fragile state it finds itself in as a result of human activity. It fails to acknowledge the fact that dredging and coastal development are major drivers of damage to the GBRWHA, and the fact that the GBR is still at risk of being placed on the 'In Danger' list by UNESCO (a risk heightened by the recent death by climate-induced bleaching of much of the Reef).

Importantly, the AEIS will not address the major problem faced by Townsville Port – the natural shallowness of Cleveland Bay and the constraints on its expansion imposed by its location in the GBRWHA region and adjacent to the GBRMP.

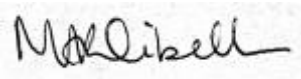
NQCC calls on the Queensland government to:

- Reject the AEIS on the grounds that it differs so widely from the EIS, and require the assessment process to be recommenced
- Reject the excessive widening of the Port access channels on the grounds, *inter alia*, that the access problems for the Port are related to depth not width
- Require an independent inquiry into the optimal means of any dredging
- In accordance with Reef 2050, require all proponents of new dredging works to demonstrate their project is commercially viable
- Refuse any work on the proposed expansion until such time as a rigorous, peer-reviewed business case that demonstrates that the net social and economic benefit of the enlarged Port exceeds the environmental cost is prepared
- Prohibit *any* dredging during peak tourism times on Magnetic Island
- Require a reassessment of the offsets required, given, in particular, the 52% increase in reclamation of important habitat for megafauna listed as

'vulnerable', and the very significant increases in capital and maintenance dredging

- Require an assessment of the feasibility of beneficial use of maintenance dredge spoil
- Given the impossibility of lengthening and thus deepening the access channels of the naturally shallow Townsville Port because of the Port's location in the GBRWHA and its proximity to the GBRMP, have Townsville Port de-listed as a priority port.

Yours faithfully,



Maree Dibella
NQCC Coordinator

Appendix A: 2012 PoTL Fact Sheet distributed in the community



The port expansion is designed to accommodate the regular operation of Panamax ships. This requires no widening of the channels other than the approaches to the new outer harbour. The dredging works proposed to occur will be examined as part of the EIS studies and potential impacts comprehensively assessed.

POTL undertakes maintenance dredging of the shipping channels each year so that a safe navigable depth is provided for shipping. Similar plant and equipment would be used, such as a trailer suction hopper dredge (see figure 2), to carry out the deepening works proposed as part of the PEP.

Examples of some of the current studies being undertaken as part of the PEP EIS are:

- Assessment of the extent and condition of seagrass and other marine communities that could be affected by the dredging, including invertebrates such as marine worms, molluscs and other animals that live in the top layers of marine sediment.
- Deployment of wave and current meters at locations in Cleveland Bay to capture information about how the natural coastal processes of the bay function (including collection of data during Cyclone Yasi).
- Development of state-of-the-art numerical models that will simulate the natural coastal processes of the bay, validated by real-time data collected about currents, waves and sediment loads. This information will then be used to predict the extent and duration of turbid plumes from proposed dredging and any potential accumulation of sediment on adjoining areas.
- Assessment of current usage of the bay by protected marine fauna (such as dolphins, turtles, dugongs and whales) and whether they could be affected by the proposed dredging and reclamation.
- Coral surveys at Magnetic Island.
- Fluorescent tracer studies to identify the pathways for the movement of sediment in Cleveland Bay.

Terms of Reference and guidelines for the marine studies under the EIS have been developed by the State and Federal Governments (including the Great Barrier Reef Marine Park Authority) to guide the assessment of proposed dredging activities in the EIS.

These can be accessed at the following websites:

<http://www.deedl.qld.gov.au/cgi/townsville-port-expansion-project.html>
http://www.environment.gov.au/cgi-bin/epbc/epbc_ap.pl?name=current_referral_detail&proposal_id=5979

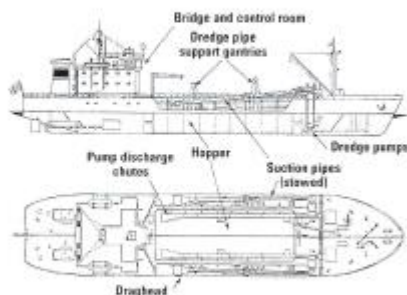


Figure 2: Trailer Suction Hopper Dredge

Contact the project team

Phone: 1300 012 284*
 Email: pep@aecom.com
 Write to us: Townsville Port Expansion Project
 Reply Paid 5423, Townsville QLD 4810.
 Visit the website: www.townsville-port.com.au/PEP

*Time call, higher rates from mobile phones apply

Appendix B: Extract from the Environmental Dredging Program prepared for the 1993 Port capital dredging campaign.

Figure 3.15 Pre-existing distribution of particles in Cleveland Bay.

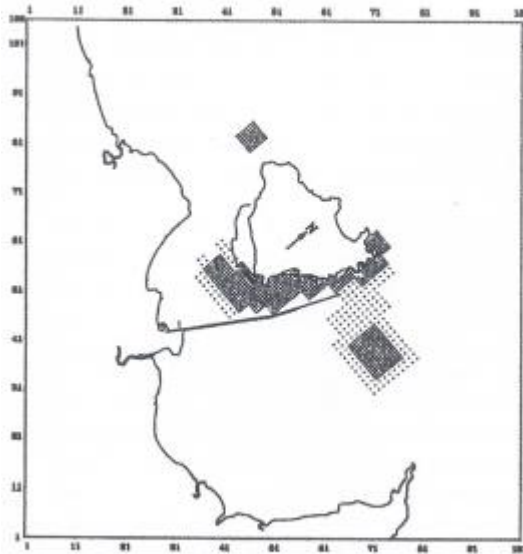


Figure 3.17 Hindcast distribution of particles after three days.

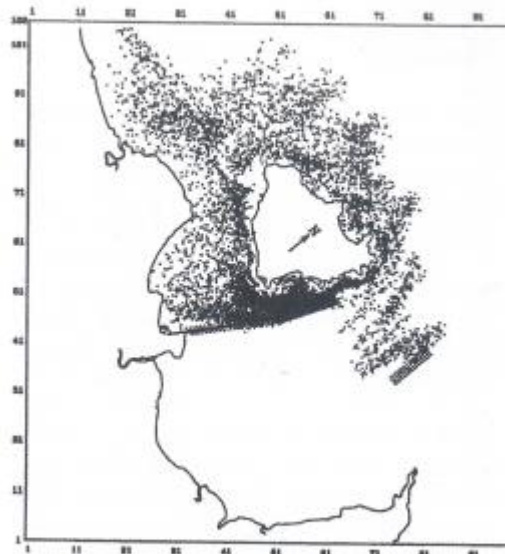
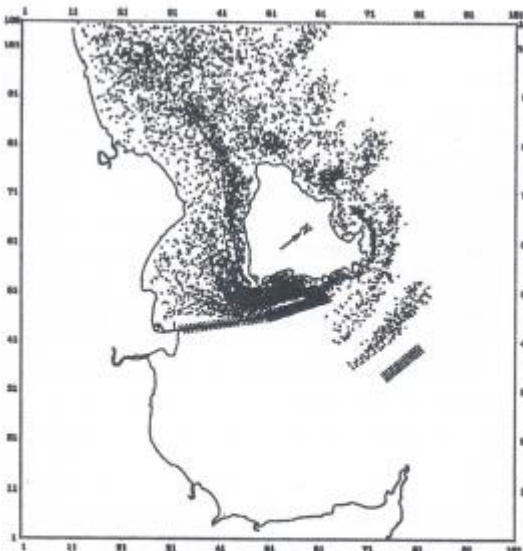


Figure 3.16 Forecast distribution of particles after three days.



Level 2 particle density is specified). It is clear that particles are advected much larger distances in the predictive model (Figure 3.16) and also penetrate further into the bays on Magnetic Island. Figure 3.17 shows that, under the significantly lighter measured winds used in the hindcast study, the suspended material remains in more concentrated groupings.

Comparison of results from the forecast and hindcast particle distributions shows that wind strength and variability play an important part in sediment movement. The forecast indicates that there would be a strong likelihood of suspended material being forced into the bays. In the hindcast period, during which the imposed winds are weaker, the net movement of material is much less than in the case of the forecast. Particles remain further from the bays of Magnetic Island, thus posing less of a problem than that indicated by the earlier forecast. This emphasises again the crucial