FLANAGAN CONSULTING GROUP
Trusted Advisor to Northern Australia

Ports North

CAIRNS SHIPPING DEVELOPMENT PROJECT

Revised Draft Environmental Impact Statement

Response to Submissions

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Purpose

This report is provided by the Proponent (Ports North) to inform the Coordinator-General of the Ports North responses to all agency and community submissions made on the Revised Draft Environmental Impact Statement (RDEIS) prepared by Ports North under the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act) for the proposed Cairns Shipping Development Project. The Coordinator-General will take all submissions into account when compiling the Evaluation Report on the project.

1.2 Submissions Received

The Office of the Coordinator-General (OCG) provided copies of all submissions received together with an Excel spreadsheet file (Revised Draft EIS - Submissions Analysis Final 19.9.17.xlsx) which provided a register of all submissions received (including proforma submissions with identical content) together with an analysis of the issues raised in each submission.

Twelve (12) submissions were received from Agencies (11 State Governmnet and 1 Local Governmnet) as listed in Table 1-1.

TABLE 1-1 AGENCY SUBMISSIONS

	Agency	**OCG Submission No**
1.	Queensland Police Service	1
2.	Queensland Health	3
3.	Queensland Ambulance Service	4
4.	Cairns Regional Council	7
5.	Department of Natural Resources and Mines	8
6.	Queensland Fire and Emergency Services	9
7.	Department of Transport and Main Roads	10
8.	Department of Agriculture and Forestry	11
9.	Department of the Environment and Heritage Protection	12
10.	Department of National Parks, Recreation, Sport and Racing	19
11.	Department of Infrastructure, Local Government and Planning	24
12.	Department of State Development – Business Solutions and Partnerships	25

These submissions are dealt with in the order that they were received by the OCG.

Twenty Two (22) individual submissions were received from members of the Community (categorised by OCG as14 from individuals, 2 from Buisensses and 6 from Community Organisations).

Seven Thousand Six Hundred and Twenty Nine (7,629) proforma identical submissions were received (categorised by OCG as 7,523 GBR proforma letters and 108 CAFNEC proforma letters).

The content of the submissions was categorised by OCG into 42 issue categories:

The issues raised in the Agency and Community submissions are shown in Table 1-2.

TABLE 1-2 ISSUES ANALYSIS

Issue	Total	Agency	Community			
			Individual	Business	Organisations	Proformas
No comment	3	3				
General comment	3	3				
Does not support the project	7641		11		1	7629
Support for the project	3	1		1	1	
Acid sulfate soils	110	3		1		106
Air quality	5	2	1	1	1	
Approvals	0	0	0		0	
Bulking factor	1	1				
Coastal processes	0					
Contaminated land	2	2				
Cumulative impacts	3	1			2	
Climate change	2	1			1	
Dredging	7537	4	7	1	2	7523
Dredge material placement site	6	2	2	2		
Economics	7539		12	1	3	7523
Environmental offsets	2	1		1		
Fauna - terrestrial	115		7		2	106
Fish	3	1		1	1	
Fishing	3	3				
Flooding	4	3			1	
Flood modelling	1	1				
Great Barrier Reef	0					
Groundwater	0					
Heritage - Indigenous	2	1	1			
Heritage - Non-Indigenous	2	2				
Impacts	0					
Coastal & Marine Ecology	9	2	3	1	3	
Nature conservation area	2	2				
Need for the project	4		3	1		
Marine Sediment Quality	7525		1	1		7523
Mitigation Strategies	1		1			
Project alternative	2		1		1	
Stakeholder & Community Engagement	1				1	
State land	0					
Tidal land	0					
Transport	3	3				
Vegetation - marine	111	1	2	1	1	106
Vegetation - terrestrial	2	2				
Waste	3	2			1	
Water Quality	7642	2	8	2	1	7629
Water Resources	5	5				
Legislation and approvals	7	6			1	

In addition to the submissions made to the Corodinator Genral under the *State Developmemt and Public Works Organosation Act* , Ports North also received 3 submissions in relation to Matters of National Environmentl Signifcance (MNES) to be considered by the Federal Minister under the *Environmental Protection and Biodiversity Conservation Ac*t

1.3 Types of Responses

Ports North responses to issues raised in submissions can be cateogorised under 7 response types as shown on Table 1-3

TABLE 1-3 TYPES OF RESPONSES

CATEGORY	RESPONSE / ACTION
1	Issue is noted and requires no action (i.e. advice).
2	Issue is addressed by better explanation or reference to content in Revised Draft EIS.
3	Issue requires further work prior to Coordinator-General's Evaluation with outcoes provided in a *Supplementary Report*
4	Issue requires further work as a imposed condition in the Coordinator-General's Evaluation Report
5	Issue can be managed by a stated condition in the Coordinator-General's Evaluation Report
6	Issue will be addressed under a subsequent approval.
7	Issue requires action by others

The 12 Agency submissions are each responded to individually in **Section 2.0**

Community Submissions have not been individually indentified and responses have been provided to the issues raised (as categorised by OCG) in **Section 3.0**.

The 3 Submissions received on MNES are each responded to individually in **Section 4.0.**

Additional work or additional information required to be prepared/provided in response to community and agency issues will be included in a *Suplementary Report* which also includes a **CSDP Schedule of Commitments** that lists all further actions that Ports North has commited to undertake. Most of these were identified in the EIS and are referred to in this report as appropriate. It is expected that, should the project not be directed to be refused, the Coordinator-General will reference the **CSDP Schedule of Commitments** in the CGER.

2.0 RESPONSES TO AGENCY SUBMISSIONS

2.1 Queensland Police Service

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
General Response	This document has been reviewed by the Queensland Police Service(QPS) and in particular officers from Northern Region, Far North District. Having reviewed the documents provided, the QPS is satisfied with the content and provisons contained within. It would be appreciated , howverer, if information related to further stages of development, particularly in relation to EIS B14 Transport and B14.2 Assessment of Traffc/Transport Impacts was communicated to QPS at a local level.	X							Noted

2.2 Queensland Health

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Contaminated Land B1.3.2.j	For the construction phase of the landward project works area adjacent to the wharf the REIS has identified that there are potentially contaminants present – through the construction phase of the project there is the potential for an exposure pathway to be formed. This element of the project will need to be tightly regulated to prevent potential public health risks **Suggested Solution** Properties identified on the EMR must be properly investigated to determine what contaminants might exist, prior to undertaking any development. A detailed contaminated land management plan is likely to be required at this location, which is not included in the current documentation.						X		Ports North will investigate properties affected by Landside works identified on the EMR to determine what contaminants might exist, prior to undertaking any development. Appropriate environmental and human health mitigation and management measures (including, if required, a contaminated land management Plan) will be developed in the Contractors EMP.
B6.6.1.a Surface Water (Northern Sands Project Area)	During the early stages of the dredged material placement in the Northern Sands location, the REIS has identified that there is likely to be lateral migration of saline water away from the dredge placement area causing impacts on water quality to a distance of approximately 120 metres (maximum) and proposed mitigation does not reduce this risk below 'medium'. There are 24 bore supplies identified in the assessment, at least 12 of which are used as drinking water supplies in this location, whilst existing water quality is described as 'slightly brackish' increased salinity will potentially have an impact on the viability of these supplies for a short duration.		X						The nearest off site bore is approximately 250m to the east. This bore is classed as slightly brackish and not likely to be used for drinking water. Groundwater monitoring will be undertaken before, during and following the project to confirm the extent of lateral migration of saline water to enable management measures to be dopted in the unlikely event that migration is greater than anticipated.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Suggested Solution It would be beneficial if additional investigations into impacts and mitigation strategies were undertaken to provide reassurances that any impact on water quality of ground water surrounding the Northern Sands Dredged Material Placement Area would be either not significant for Public Health Impact or able to be further mitigated to prevent impact on Public Health.								
Surface Water	Trinity Bay Dredging Site- The area to be dredged (the bed fo Trinity Inlet is likely to contain numerous contaminants such as TBT, copper etc deposited over many years by adjacent slipways, ship yards and the Navy Base. Once suspended in the water columan it may effect recreational water quality of the inlet and along the beaches to the north. Contaminants such as heavy metals could bio-accumulate in fish stock. Similarly the the dredge disposal area could also be subject to the same imapcts.		**X**						The National Assessment Guidelines for Dredging (NAGD) are specifically formulated to account for toxicant bioavailability and bioaccumulation. As discussed in Chapter B4, Revised EIS capital dredge material testing identified 100% compliance with NAGD guidelines. This is supported by Ports North's sediment quality monitoring conducted as part of ongoing assessments in support of maintenance dredging operations for at least 15 years, which shows ongoing compliance.
Air Quality B11.5.1	The current air quality profile as estimated in the assessment is not based on background monitoring in Cairns. **Suggested Solution** It would be beneficial to undertake accurate baseline air quality monitoring so that the likely impact of the operations and construction phases can be best informed				X	X			Ports North will conduct accurate baseline air quality monitoring in the environs of the proposed Cruise Ship berthing wharves from which a detailed assessment of background conditions and potential impacts can be determined. This will be included within the proponents commitments in the Supplementary Report.
Air Quality	Trinity Inlet and Wharfside Construction / Operation phases - Dust generation and vehicle exhaust emissions during construction and dredging have the potential to impact on air quality and potentially Public Health					X			Potential construction and operation phase air quality impacts on senstive receptors in the vicinity of Trinity Wharf and pipeline/ DMPA infrastructure will be managed through the mitigation measures identified in B.11.5.1.a, B11.5.2.a , C.1.7, B11.4.3.b and C.1.7.4 including 'current best practice' solutions and equipment, in compliance with the Queensland Environmental Protection Policy (Air).

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Suggested Solution Management through mitigation measures identified in B.11.5.1.a, B11.5.2.a and C.1.7.4 should be implemented. All pollutant emitting equipment / machinery shall be fitted with the most stringent and highest standard emission control solution available at the time of use. Where alternative technology exists and is available then the cleaner / quieter option should be used. As described in B11.4.7.b – where possible, marine diesel fuel should be used to limit emissions adjacent to sensitive receptors during dredging phase. PM2.5 and PM10 emissions adjacent to the wharf should be monitored and controlled to prevent exceedances during the construction and dredging phases. Selective Catalytic Reduction controls should be implemented on diesel cranes during construction phase to prevent Public Health impacts at sensitive receptor sites.								
Air Quality	The tailwater discharge pumps at the Northern Sands DMPA will exceed emissions standards if suitable emission control technology is not utilised. **Suggested Solution** Management through mitigation measures identified in B11.5.2.b should be implemented					X			Potential construction and operation phase air quality impacts on senstive receptors in the vicinity of Trinity Wharf and pipeline/ DMPA infrastructure will be managed through the mitigation measures identified in B.11.5.1.a, B11.5.2.b , C.1.7, B11.4.3.b, B11.4.7b and C.1.7.4 including 'current best practice' solutions and equipment, in compliance with the Queensland Environmental Protection Policy (Air).
Air Quality	Dust deposition during construction and dredging operations **Suggested Solution** Mitigation measures identified in B11.4.3.b and C.1.7.4 should be implemented and Ports North should tightly monitor contractor performance to ensure compliance					X			Potential construction and operation phase air quality impacts on senstive receptors in the vicinity of Trinity Wharf and pipeline/ DMPA infrastructure will be managed through the mitigation measures identified in B.11.5.1.a, B11.5.2.b , C.1.7, B11.4.3.b and C.1.7.4 including 'current best practice' solutions and equipment, in compliance with the Queensland Environmental Protection Policy (Air).
Air Quality	Pollutant / dust deposition through increased cruise / commercial shipping activity has been identified as a potential impact on Public Health.				X				Regulation of air quality in Queensland (via the Environmental Protection Policy -Air) is a Department of Environment and Heritage function and is complaint driven; in the event of a complaint DEHP may direct PN to undertake a a technical investigation of the matters that gave rise to the omplaint and implementation of necessary mitigation measures to enable compliance with the EPP.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Suggested Solution Assumptions made in air quality monitoring are potentially unsubstantiated. It is recommended that the Coordinator General's office stipulates through their regulatory mechanisms that conditions or controls are implemented to formalise requirements on ship operators to meet the measures assumed in the air quality assessments. If this is not considered practicable, consideration should be given to undertaking further more detailed long term air quality modelling disregarding the assumptions made in this study. Section B11.5.2.a details 'Mitigation by Design' measures and includes a survey of fuel consumption and fuel types of tankers and cruise ships whilst vessels are berthed at the wharf, and further suggests, this data can be used to refine the control measures required. It is recommended that the Coordinator General's office stipulates through their regulatory mechanisms that this study and resultant control measures are undertaken as part of any approval process. During the construction phase and the dredging/operational phases of the dredging process the REIS has described ongoing air quality (principally for particulate matter) monitoring taking place. There is however nothing detailed concerning ongoing operational monitoring of air quality during the operation of the enlarged port facilities other than a recommendation in the air quality impact assessment appendix that ongoing PM 2.5 and PM 10 monitoring should occur. No firm commitment has been made.								Under the EP Act 'Duty of Care' provision, Ports North propose to conduct a baseline air quality assessment(including cruise shipping at berth) and rerun the Air Quality Dispersion Model, including review and revision of construction and operation phase assumptions used in the Revised EIS Air Quality Impact Assssessment (Appendix AX) and testing of mitigation measures. All appropriate mitigation measures will be incorporated within construction phase Contractor EMPs. The enforcement of 2020 IMO air quality standards will be an AMSA (Australian Martime Safety Authority) responsibility (through adoption of and implementation of the IMO committments) however Ports North will also conduct periodic monitoring of air quality at sensitive receptors during ongoing operations to validate the effectiveness of mitigation measures and will actively engage with cruise ship companies to ensure compliance with the IMO regulations. Potential construction and operation phase (dredging) air quality impacts on senstive receptors in the vicinity of Trinity Wharf and pipeline/ DMPA infrastructure will be managed through the mitigation measures identified in B.11.5.1.a, B11.5.2.b , C.1.7, B11.4.3.b and C.1.7.4 including 'current best practice' solutions and equipment, in compliance with the Queensland Environmental Protection Policy (Air).
Noise and Vibration B10.5	**Noise and vibration impacts during construction and operation**					X			Potential construction and operation phase (dredging) noise impacts on senstive receptors in the vicinity of Trinity Wharf and pipeline/ DMPA infrastructure will be managed through the mitigation measures identified in B.10.5.1 and C1.7.3.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Mitigation measures identified in B10.5.1 and C1.7.3 should be implemented and monitored throughout the construction phase and operations. It is recommended that an assessment of tailwater pump noise is undertaken when the exact location of the pump is known and when the pump model is selected. **Suggested Solution** It is recommended that the Coordinator General's office stipulates through their regulatory mechanisms that the highest levels of controls, as detailed in the REIS are implemented and adhered to, rather than allowing for Ports North to leave the controls open for variation in the mitigation strategy further down the line when the project has received approvals.								As part of the contractor procurement and detailed design process, noise impacts(particularly booster pump location and operation) will be reassessed to minimise impacts and ensure compliance with the EPP (Noise). All appropriate mitigation measures will be incorporated within construction phase Contractor EMPs. Noise related mitigation measures will be included within the proponents commitments in the Supplementary Report.
Noise and Vibration	Piling is to occur near sensitive receptors, it is expected that noise form piling has the potential to impact sensitive receptors, and therefore it is recommended that piling is only undertaken during standard construction hours (it is recommended that piling is not undertaken between the hours of 10.00 pm to 7.00 am (night time) as it is expected that pling during this period may result in sleep disturbance					X			Construction works will be scheduled to meet standard Council and DEHP noise management requirements for construction sites . Piling will not be undertaken between the hours of 10pm to 7am.
Health Services	QH should make a recommendation that this section must include an assessment of the potential impacts on health services from bringing in many thousands of extra visitors (many directly from overseas) to the city in short periods of time.		X						Given that passenger numbers will represent a small proportion of the Cairns district tourist population at any time, existing health services can be expected to have the necessary capacity. "Cruise ship health management arrangements are addressed by a process by which the arriving cruise ship crew is obliged under the *Biosecurity Act 2015* to provide a "*Human Health Declaration"* to the Australian Quarantine's MARS online (Maritime Arrivals Reporting System) at a minimum of 48 hours prior to time of arrival. Then quarantine follow through actions to determine overall health status via MARS. Local arrangements are enacted via the local quarantine officers, which require an update on status on the afternoon before arrival and again on morning of arrival. The designated ships agent is responsible for management of the local interaction between emergency, health and response agents, and subsequent allocation of additional resources in the need of notifiable infectious diseases.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									This is a well-documented, practiced process enacted by Department of Agriculture and Water Resources agency staff.

2.3 Queensland Ambulance Service

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
General Response	Following the review of the revised draft Environmental Impact Statement for the Cairns Shipping Development Project, the QAS maintains that it does not forsee any issues arising that would directly impact ambulance service delivery.	X							Noted

2.4 Cairns Regional Council

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Downstream Approvals	Council's preferred position is that the revised draft EIS identify: All downstream approvals for all components of the Cairns Shipping Development Project; The assessment manager and assessment jurisdictions for all downstream approvalsassociated with all components of the Cairns Shipping Development Project; and The downstream approvals and environmental authorities which the proponent is seeking to be assessed and evaluated by the Coordinator General's evaluation report. Council's research into current approvals on this site indicate that those approvals do not provide for the volume of waste disposal now proposed, and that a number of the existing conditions of those approvals would need to be amended or replaced to appropriately deal with the disposal of dredge material now proposed. The following are approvals that Council considers to be intrinsically linked and incapable of being separated and should be assessed and conditioned in a coordinated manner by a single state agency (e.g the Department of Infrastructure, Local Government and Planning): • Material change of use for Environmentally Relevant activity for extractive and screening activities (dredging); • Material change of use for Environmentally Relevant activity for waste disposal (for dredge material placement and associated transportation pipeline works);		X				X		Ports North notes Council's position in regard to seeking assessment of a composite developmemt applications by a single stae agency. Ports North notes that the approvals required will be a defined in relevant legislation. Chapter A4 of the Revised Draft EIS sets out the identified approvals required and the relevant jurisdiction and Assessment Manager. Ports North acknowledges OCG's advice that following consultation with CRC and DLGP it has been detewrmined that placement of dredge material on land within the Cairns Regional Council area represents an "Undefined Use" under the provsions of the CairnsPlan 2016 A summary of the approvals required is shown below: **Proposed Approvals** **CSD Revised Draft EIS – Outline of Approvals to be addressed in CGER** • Material Change of use for an Undefined Use under the Cairns Plan • State Marine Parks Permit – Channel expansion (DNSPR) • FHA/revocation or amendment of zone boundaries (DAF/DILGP) • Allocation of Quarry Material (DEHP/DILGP) • Amendment to current permit for disturbance to marine plants (seagrass in dredge footprint) (DAFF) Ports North is seeking stated conditions relating to a future application for a Preliminary Approval for an EA for an ERA 16 (Dredging) and a Material Change of use for an Undefined Use (Dredge material placement). It is expected that the stated conditions will cover the following: • Broad description and reference to plans for the channel dredging, the general location of the pump out facility, delivery pipeline corridor , the NS DMPA site as well as the tailwater discharge pipeline corridor and discharge point and the Tingira Street DMPA sites.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• All associated operational works permits, including (for the land based works at the Northern Sands dredge material placement area and associated transportation pipeline): • All permits for the bunds for the primary and tertiary treatment ponds including onsite pipelines and tailwater discharge pipeline/s; • All permits associated with the transportation pipeline (e.g. prescribed tidal works,waterway barrier works, excavation and filling works, vegetation damage and destruction works); and • All permits for works within a marine park, fish habitat, coastal management district and wetland protection area.								• Defines the process for setting environmental discharge limits for the dredging and tailwater and groundwater quality limits, air and noise limits, etc • Defines the process for setting monitoring regimes and locations • Prescribes TOR , membership etc. of Expert Advisory Committee • Sets requirements for Acid Sulfate Management Plan including verification/validation testing of PASS material types SNP and proposals for treatment if required and; • Refers to Proponents Commitments. **Downstream "approvals" for Environmental Authorities and Operational works permits** • EA for ERA 16 (Dredging) Operational Works elements for Dredging delivery, placement and tailwater management for of soft and stiff clays in the respective DMPAs (DEHP) • Development Permit for OP works (tidal Works) for the Dredging and pump out facility (DEHP/CRC) • Development Permit for Marine Plants and any Op Works in waterways for the delivery pipeline (DAFF) • Dev Permit for OP Works /Tidal Works for Wharf Fender Construction (inc. Pile Driving) DEHP/DILGIP • Dev Permit for OP Works /Tidal Works for Tailwater discharge to Barron River (if required subject to design) DEHP/DILGIP • Dev Permit for OP Works for filling > 50 m3 under the planning scheme for temporary bunds at Soft Clay DMPA (CRC) • DEHP – Dev Permit for Works on Heritage Place including demolition of Wharf 6. (DEHP/DILGP) **Other Downstream Approvals** Approval under the Aboriginal Cultural Heritage Act. It is understood that an overall CH Management Plan for the project and with each relabvnt claimant goups is to be developed and approved The required approvals are not contemporaneous and will be required in a logical sequence as the project's detailed design progresses. Ports North's view is that the various approvals are able to be separated and assessed by athe relevant agencies. The jurisdiction and Assessment Manager for the approvals required for each element of the project will be defined by the relevant legislation.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									Ports North is not seeking a full suite of conditions relating to the detailed design and form of the proposed delivery pipelines and DMPAs. These will be appropriately regulated as part of operational works applications identified in Chapter A4. Such applications will be supported by detail design plans for the respective elements. This detail will be able to be provided following detailed design and contractor procurement. Provision of this detail at this stage is considered premature and inappropriate. Ports North does not agree that a Material Change of Use for Environmentally Relevant Activity for waste disposal (for dredge material placement and associated transportation pipeline works); is required as dredge material is not a waste. Ports North does not consider that the placement of dredge material in an existing void represents a change to the scale or intensity of an existing use or the establishment of a new use on the land. The placement of fill on rural land is not identified as a land use in the Planning Scheme but rather as an action involving bulk earthworks > 50 m^3 which is defined as Operational works and not a defined use of the land. Ports North is currently negotiating with the Northern Sands land owner for access to the deeper parts of the existing void which may provide the opportunity for increased volume below permanent ground water , increased retention time and water quality management volumes and well as lower flood immunity bunds. Ports North is conducting further Placement simulations, flood immunity modelling and groundwater modelling of the alternate DMPA arrangement. The results of these simulations/modelling will be provided in the Supplementary Report along with further clarification and information on the DMPA arragement currently prosed in the Revised Draft EIS.
Water Quality	**Summary of Council's preferred position relating to Water Quality** Council's preferred position is that the impacts on the receiving environment are fully understood by the community before approval is given, either at the project level or for individual ERAs by DEHP. Currently, the revised draft EIS is unclear in terms of the following:			X					It is expected that Water Quality issues will be considered and regulated via an application for an EA for ERA 16 (Dredging) and the conditionsapplied to the resultant site specifc Environmnetal Authority. Ports North is seeking stated conditions relating to a future application for an ERA 16 (Dredging) It is expected that the stated conditions will cover the following: • Define the process for setting environmental discharge limits for the dredging and tailwater and groundwater quality limits, air and noise limits, etc • Define the process for setting monitoring regimes and locations • Prescribes TOR , membership etc. of Expert Advisory Committee

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The delivery of suspended solids into the Barron River during the dredging campaign; The risks to current groundwater users to the north of the Northern Sands site should the modelled results be exceeded; The sensitivity of the modelled discharge surface water and groundwater qualities to potential project delays; and The sensitivity of the project to unanticipated issues with dredged material settling timings and turbidity impacts on the Barron River.								• Sets requirements for Acid Sulfate Management Plan including verification/validation testing of types of PASS material and proposals for treatment if required and; • Refers to Proponents Commitments
Water Quality	Potential consequences and complexities with respect to turbidity, depending on the background conditions (and the initial site capacity to hold the waters), over the 12 week project, this could for example, equate to an additional 725 tonnes of suspended solids being discharged into the Barron River at one of two potential locations. The current Northern Sands operation does not appear to anticipate any delivery of suspended solids on an operational basis. With respect to the selection of the locations, WBM has stated that the upstream location is likely to produce a lower degree of risk to the seagrass beds identified within the Barron River. With respect to groundwaters, impacts are anticipated to the north of the Northern Sands site dueto seawater being utilised. Depending on the degree of filling, consolidation and the duration of theplacement and settlement, the impacts are anticipated to be contained to within 120m from thedisposal area but again in excess of the current ERA limit of 1000 microsiemens per centimetre. Anticipating that these waters will mix, the ERA will need to change or be altered.						X		On the basis of the proposed tailwater TSS limits (50 mg/L 2 week average) and tailwater discharge of 65,000m^3/day, a total of 273 tonnes of suspended solids could be discharged to the Barron River over an 84 day project duration. A James Cook University(2002) study of sedimentology of Trinity Bay noted that the Barron River historically contributes an average of 250,000tpa to Triity Bay. Recent data from the Reef and Rainforest Research Centre identifies a range of Barron River sediment export of 40,000 tpa and upto 400,000tpa in response to major cyclonic events. On this basis the 273 tonnes of sediment potentially discharge to the Barron River by the project represents y 0.001- 0.7% of the average annual suspended solids load of the Barron River, which represents a low risk of impact. It is noted that in the 2007/8 wet season it is estimated that the Barron River discharged 400,000 tonnes with the influence of cyclone Larry; potential project discharges represent approximately 0.007% of this total. The proposed Barron River tailwater discharge location at the Cook Highway bridge is the preferred location because of increased mixing capacity and reduced changes to salinity flux in the upper Barron and Richters/Thomatis Creek; this will present a marginal increase in turbidity and hence potential impact on seagrasses near the mouth of the Barron River, and such discharge is well within background variance.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									The risks to current groundwater users to the north of the Northern Sands site are negligible as the hydrogeological groundwater model results illustrate, the zone of impact does not reach these users, is contained within the immediate vicinity of the site and is relatively temporary. Whilst the temporal aspects of the surface water and ground water impacts may be affected by project delays, it is noted that the intensity of impact would be reduced. Additional settling time and reduced water head would result from delays and lessen potential impacts. As outlined above any unanticipated issues with settling or Barron River turbidity effects could be mitigated in the first instance by delaying the dredging, reducing the number of dredge cycles per day or using available capacity within the bunded area to defer tailwater discharge via the adjustment of the discharge weir boxes. All are standard practices adopted in such dredging projects. Ports North is conducting further Placement simulations and groundwater modelling of the alternate DMPA arrangement. The results of these simulations/modelling will be provided in the Supplementary Report along with further clarification and information on the DMPA arragement currently proposed in the Revised Draft EIS.
Acid Sulfate Soils	Currently, the EIS is unclear on whether the PASS will settle at a level below current ASS/PASS interface. This needs to be resolved with respect to long term delivery of acidic by-products. Council needs to be assured that untreated PASS will be reinterred below a final water table level equal to that influenced by the Barron River.						X		The primary element of PASS management strategy is placement below permanent groundwater to prevent oxidation; Oxidation is to be further prevented by placement of Self Neutralising material over PASS materials. Material placement bathymetry is to be managed by sequential placement via multiple underwater spigot points to prevent beaching and to actively control placement locations. An Acid Sulfate Soil Management Plan(ASSMP) in accordance with Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines has been prepared and will be provided in the Supplementary Report.
Acid Sulfate Soils	Additional information sought: Cross sections through deposition areas showing final consolidated waste level within landform compared to current ASS/PASS interface.						X		Time series cross sections and material volumes for the Revised Draft EIS DMPA and the alternative will be provided in the Supplementary Report.
Bulking Factor	Page 30 of Appendix AC states that the average in-situ dry density of the material is 0.96t/m3 whilst the simulations for 710,000m3 state an average placed dry density of 0.286t/m3 (yielding a bulking factor of 3.35).			X					Notwithstanding the reported bulking factors resulting from the various reclamation model runs by JFA in the Revised Draft EIS, Akuna Dredging (Appendix Z) provided anticpated volumes to be delivered to the DMPA at the end of the delivery pipeline - on the basis of input output calculations and extensive dredging experience.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	The method of how the average in-situ dry density of the material was gained remains unclear and the bulking factors were obtained from modelling rather than available survey data form previous dredging campaigns. In any event, sensitivity analyses should be completed to test the sensitivity of: the modelled discharge surface water and groundwater qualities to potential project delays;and the project timing to unanticipated issues with the bulking factors, settling timings and concomitant turbidity impacts on the Barron River. Additional Information sought includes: Analyses should be completed to test the sensitivity of; • the modelled discharge surface water and groundwater qualities to potential project delays; and • the project timing to unanticipated issues with the bulking factors, settling timings and concomitant turbidity impacts on the Barron River Sampling and testing methods, and results that determined the average in-situ dry density of the dredge material.								A Bulking Factor not a fixed material-related property that can be surveyed from previous dredging campaigns and directly applied to future projects. Whilst it is related to the material properties it will also be dependent on the dredge pumping capacity, additional delivery pumping water requirements, dredge and pump out cycle timing, management of the delivery point into the pond and the geometry of the receiving pond. Hence conservative modelling scenarios have been adopted. Dry density testing procedures are identified in Golder (2016) which will be provided in the Supplementary Report. Ports North is currently negotiating with the Northern Sands land owner for access to the deeper parts of the existing void which may provide the opportunity for placement of additional volumes of dredge material below permanent groundwater. Ports North is conducting further Placement simulations of the alternate DMPA solution. The results of these simulations will be provided in a Supplementary Report.
Hydrology	The revised draft EIS contains some information on the assessment of the impact of the project on flooding (mainly in Appendix N and Appendix AD), but the information contained is considered to be deficient. Additional information sought incudes: • Clarification of the proposed placement,treatment and discharge process. • Provide an integrated timeline for activities associated with the Northern Sands site from the start of construction to the completion of settlement / rehabilitation.			X					Weekly and daily time step material and water input output calculations will be provided in the Supplementary Report. It is considered that the assessment of potential flooding impacts of the NS DMPA have been adequately provided in Chapter B17 and Appendices AD and N. Ports North is conducting further flood impact modeling on an alternate DMPA solution. The results of the further flood modelling will be provided in the Supplementary Report. The further flood modelling report will include a Consequence Category Assessment for the Northern Sands DMPA (Revised EIS solution with 7.5m high bunds and the alternate solution with 5.5m high bunds).

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	• Provide documentation describing the basis for the timeline, including the modelling of dredge material accumulation/settlement and watertreatment/ discharge. • A clear timeline of construction, placement, deconstruction and settlement would be very useful in evaluating flooding related risk associated with the proposal. • Provide an assessment of the sensitivity of the timeline, bund size, etc to key factors of uncertaint flexibility.Describe contingency actions to deal wit uncertainty. • Provide a description of the development of the flood model used to assess the impacts of the proposal on flooding. • Provide a description of the interaction of the proposal with the existing site usage. Provide an assessment of the impact of the proposal against relevant base cases. • Describe a set of flood modelling cases to enable • Assessment of the full impacts of the proposal on flooding. • Provide a more appropriate assessment of risk/impact during the Construction/ Placement/Deconstruction Stage.If serious impacts are likely if a flood occurs during this phase, develop an appropriate Emergency Action Plan. • Provide a more appropriate assessment of risk/impact during Peak Development of the site. • Provide a more appropriate assessment of risk/impact during settlement. • Provide a more appropriate assessment of risk/impact for the final landform case/s. • Provide an assessment of the potential impact of rare events. • Provide an assessment of the potential impact of the project on erosion on neighbouring areas (the • Barron River, Thomatis/Richters Creek, Captain Cook Highway, etc).								The further flood modelling report will address: • flood immunity level adopted • risk minimization measures (such as balancing pipes) • the risk of erosion of the Bund batters during a major flood event • whether bunds to Probable Maximum Flood (PMF) would provide any benefit or reduce risk of environmental harm. The flood modelling and CCA will be provided in the Supplementary Report

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• Provide an assessment of the potential consequences of structural failure of the bund. • Provide an assessment of the potential erosion of the bund / tertiary treatment pond, etc in design / overtopping events. • Provide an assessment of the impact of the project on flood hazard. • Provide an assessment of flood impacts at points of particular interest. • Provide an assessment of the risk of dredge spoil remobilisation consistent with the proposed project methodology.								
Dredge Material Placement Site	<u>Future Dredge Material Disposal Opportunities /Cumulative Impacts</u> • It is prudent to consider the potential for cumulative impacts associated with a proposal. • Further dredging is required in the future. • Maintenance dredging will continue to be required, and Section ES.A.2 indicates there is an existing licence to allow the current sea based disposal to continue to 2020. Section ES.A.3 indicates that the volume of maintenance dredging will increase by some 2-6% as a result of this proposal. • There may also be a need for additional capital dredging for future port expansions. • If Northern Sands, or other sites in the Barron Delta, are likely to be used for future maintenance or capital dredge material disposal, an evaluation of the potential cumulative impacts of future dredged		X						Ports North have the necessary permits in place until 2020 to dispose of maintenance dredge material in the approved offshore DMPA (including any additional maintenance material as a result of the project)and there is no expectation that State and Federal authorities will require onshore placement of this material. The application for a future maintenance dredging disposal permit will require assessment of land and sea disposal sites in accordance with the National Assessment Guidelines for Dredging, legislation and policies applicable to maintenance dredging. The CSDP is a one off project and no more major capital dredging is supported under the Sustainable Ports Development Act (2015). In addition, there is no expectation that applications for any future capital dredging material would involve the Northern Sand void due to capcity constriants or any other Barron Delta voids due to minimal volumes of capital dredging in Cairns allowable under the SPDA rendering tis as not economically viable. Maintenance dredging of the channel has been contracted to the TSHD *Brisbane* to 2020 . This dredge is not capable of pumping the distance ashore. Therefore the assessment of cumulative impacts of any such projects is considered to be unnecessary.
Dredge Material Placement Site	<u>Local Drainage / Stormwater Management / Erosion and Sediment Control</u> • Local Drainage - It is noted that detailed design will need to consider local drainage issues associated with the development, e.g. allowance for cross-drainage under the 1m diameter dredge material delivery pipe laid along the ground surface as per plan A3-3.						X		Ports North will prepare Stormwater Management Plan to accompany Operational Works applications for the Dredge material delivery pipeline and Northern Sands DMPA.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• A site Stormwater Management Plan and/or Erosion and Sediment Control plan will likely to be necessary to cover the construction/operation/settlement phases of the project (with the EIS reflecting this requirement in Chapter C1 and C2.) • The relevant existing Quarry/Waste Disposal use plans may require update to reflect the changes caused by the dredge material placement activity								
Dredge Material Placement Site	**Enhancement of Settlement** The time it takes for the material to consolidate is an important factor in the level of risk from this proposal. The settlement time affects both the height of the bund (and thus third party flood impacts) but also the risk of resuspension. The total time for settlement is unclear from the revised draft EIS. If the total time for settlement is long, or if there is considerable uncertainty on the settlement time, the proponent may wish to consider techniques to encourage consolidation, e.g. the provision of prefabricated vertical drains, etc.			X			X		Consideration will be given to consolidation enhancement techniques in the detail design of the DMPA Ports North is conducting revised placement simulation including medium and longer term consolidation modelling. The results of the placement simulation will be provided in the Supplementary Report.
Water Quality	**Monitoring** There is some discussion on water quality monitoring for surface and groundwater in the revised draft EIS (Chapter C2), and pageC1-24 discusses post-placement settlement monitoring, however it will also be appropriate to monitor the level of material during placement in the bunded area, so as to be able to trigger contingency actions for excessive bulking factors in a timely manner. It will also be important to clearly mark the maximum permitted level for materials in the bunded area. If the contents of the bunded area reaches this maximum level, dredge material placement must stop until the material (sediment and water) level drops. Such operational monitoring requirements should be made clear in the site stormwater management plan.		X				X		The issues raised are discussed and addressed in the RD-EIS(Chapter C2 Dredge Managemmet Plan) will be further addressed in the Dredge Management Plan to be prepared as part of the application for the EA for ERA 16 (Dredging) and the site specific storm water management plan to accompany the Operational works application for each site ,inclusive of the works required to establish the temporary bunds at eqch DMPA site.

2.5 Department of Natural Resources and Mines

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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A3.3 Dredge Material Delivery and Placement A3.3.1a Dredge Material Delivery Pipeline – Soft Clay Dredging	**Impacts on surface water** The EIS references the need for a suitable water source which can supply and receive large quantities of service water (for gland water pump flushing) and in some cases for cooling water. **Suggested Solution** Water in watercourses located in the vicinity of Northern Sands and Tingira Street Dredge Management Placement Areas (DMPA) are below the downstream limits of the jurisdiction of the Water Act. No entitlement is required under the Water Act to take water from these watercourses. Any potential interference with water in a watercourse caused by the pipeline will also be located outside the jurisdiction of the Water Act. During a teleconference with the proponents (9/08/2017), it was stated that no fresh water would be required for the project. Should this change and the proponents require water regulated under the Water Act, the proponents should contact WaterInfoNorth@dnrm.qld.gov.au to discuss available options.	X							Noted The proponent does not foresee the need to uptake of fresh water frm watwercourses at or adjacent the project sites for conduct of the project.
A3.3 Dredge Material Delivery and Placement A3.3.2 Dredge Material Placement	**Impacts on Groundwater** Impacts on non-tidal water quality due to drainage from land based sediment placement may negatively affect existing groundwater or surface water entitlement holders.		X						With the exception of the initial displacement of Lake Narelle waters, no extraction of groundwater is proposed at the Northern Sands DMPA. It is expected that saline process waters contained in Lake Narelle at completion of dredging and saline groundwater (extending up to maximum 120m from the NS DMPA) will dissipate with time

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Areas (DMPA) A3.3.2.a Soft Clay DMPA	**Suggested Solution** Underground water at the Northern Sands site is managed under the Cairns Northern Beaches Groundwater Management Area. An authorisation under the Water Act is required for the take of underground water in this area. An application for a groundwater licence within the Cairns Northern Beaches groundwater management area is able to be submitted to the Department of Natural Resources and Mines for assessment. A temporary water permit can be issued under the provisions of the Water Act; however the purpose for which the water is required must have a reasonably foreseeable conclusion date (i.e. a temporary activity such as construction). Water released into the Barron River must not be underground water from the aquifer. If underground water is to be extracted (including for dewatering purposes) then an authorisation under the Water Act will be required. The proponents should contact WaterInfoNorth@dnrm.qld.gov.au to discuss available options. Underground water at the Tingira Street DMPA is not managed and no authorisations are required under the Water Act for the take or interference with this water.								
Clearing of regulated vegetation B1.1 Introduction B1.1.4 End Use of DMPAs B1.1.4.b Delivery Pipeline	**Northern Sands DMPA** Based on the indicative alignment of the dredged material pipeline, the proposal will result in the clearing of assessable vegetation regulated under the Vegetation Management Act 1999 (VMA) and Planning Act 2016. Clearing of vegetation will be required for the placement of dredge spoil, construction of infrastructure to transport the dredge spoil (i.e. for the pipeline alignment) and for access.						X		Detailed planning of the NS DMPA, including route planning of the dredge material delivery and tailwater discharge pipelines will ensure minimization of vegetation clearing impacts. Prior to the issue of a Development Permit for Operational Works (vegetation clearing) associated with Northern Sands pipeline, Ports North will submit details of the proposed pipeline route once the extent of required clearing is finalized.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
B2.4.4 Queensland Nature Conversation Area B2.4.4.e Remnant and Regrowth Regional Ecosystems B8.4.4 MSES B8.4.4.d Vegetation Management Regional Ecosystems and Remnant Map Northern Sands Project Area	Section B2.4.4e Remnant and Regrowth Regional Ecosystems states that approximately 0.14 hectares of regional ecosystems 7.2.9a and 7.1.1/7.3.25a will be cleared to construct the pipeline. **Suggested Solution** The proponent will be required to apply for approval under the VMA and Planning Act 2016 if clearing of regulated vegetation is proposed and the works cannot: meet an exemption under Schedule 21 of the Planning Regulation 2017; or, be carried out in accordance with an accepted development (self-assessable) vegetation clearing code. Under Schedule 10, part 3, division 1, item 4 of the Planning Regulation 2017, the clearing of native vegetation is prohibited development unless it is for a relevant purpose under section 22A of the VMA. A relevant purpose determination under section 22A will be required prior to lodging a development application involving: operational work for native vegetation clearing; or, a material change of use involving native vegetation clearing. Applicants must apply directly to the Department of Natural Resources and Mines for a determination on whether the proposal meets the relevant purpose requirements of section 22A.								
Clearing of regulated vegetation B1.1 Assessment of Potential Impacts B1.4.1 Impact Assessment	**Tingira Street DMPA** The Tingira Street DMPA sites are mapped as containing Category B, Category R and Category X areas. The Category B area is mapped as least concern regional ecosystem 7.1.1; mangroves. As mangroves do not meet the definition of vegetation under the VMA, DNRM has no requirements concerning the clearing of mangroves						X		Ports North have a current Development Approval, inclusive of marine plant removal permit for mangrove clearing between the grassed area of proposed stiff clay placement area and Smiths Creek associated with the construction of the Tingira Street Common User Barge Ramp (CUBF). Vegetation within that clearing is remnant regional ecosystem 7.1.1 (mangrove, saltmarsh) however mangroves do not meet the definition of vegetation under the VMA. Other Category area mapping that ovelyas the subject site is an artifact of mapping polygon boundary resolution or offset and are inaccurate in respect of lot and cleared boundary alignment,

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Methodology B1.4.1e Assumptions B8.4.4 MSES B8.4.4.d Vegetation Management Regional Ecosystems and Remnant Map Tingira Street DMPA	Section B1.4.1.e Assumptions states that there will be a 20 m buffer between the edge of the bunds and the mangrove vegetation at the Tingira Street sites and section B8.4.4.d states that clearing of regional ecosystem 7.1.1 at the Tingira sites will not be required. However, it is also important to consider clearing necessary for transportation from sea to land (i.e. machinery/plant access). The Tingira Street DMPA is also mapped as containing Category R (regrowth watercourse and drainage feature area). Clearing within a Category R area must be undertaken in accordance with an accepted development vegetation clearing code – Managing Category R regrowth vegetation. **Suggested Solution** Myrmecodia beccarii (ant plant) is a 'protected plant' under the Nature Conservation Act 1992, occurring in mangroves and lowland forests around Cairns and northern Cape York. Proposals to clear protected plants 'in the wild' (www.ehp.qld.gov.au/licences-permits/plants-animals/documents/op-protected-plant-wild.pdf) for any reason may require a permit from the Department of Environment and Heritage Protection. Prior to any clearing of protected plants, a person must check the flora survey trigger map to determine if the clearing is within a high risk area.								Should specimens of Ant Plant (*Myrmecodia beccarii*) be present in the mangroves at Tingira Street, actions as per the translocation plan approved for the CUBF will be enacted via a permit under the Nature Conservation Act if necessary; surveys will be conducted during the detailed design phase to confirm presence or absence.
State Land B1.3 Existing Situation B1.3.3 Northern Sands Project Area Figure B1-6 Affected lots in the	Approvals under the Land Act 1994 (Land Act) may be required for the proposal to proceed on any land that is owned by the State of Queensland, including trust land (i.e. reserves), leasehold land, road corridors (including esplanade) and unallocated state land. Where the pipeline traverses reserve (Lot 139 NR3818) and leasehold (Lot 115 NR3359) land, DNRM will provide a letter of authority subject to the agreement of the registered trustee and lessee respectively and subject to cultural heritage, indemnity and public liability insurance being provided.						X		Ports North will obtain relevant approvals (i.e. land owner's consent) and relevant authorities under the Land Act 1994 to access and use the land for the duration of the project prior to any development application being lodged.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Northern Sands Project Area	The pipeline alignment must be remediated after works are completed and left in a clean and tidy state. No formal tenure is required for this action. The applicant may also be required to obtain owner's consent from DNRM prior to lodging a development application for: material change of use involving state owned land; and, operational work below high water (tidal work) involving aquaculture, works in a declared fish habitat area, constructing or raising waterway barrier works and the removal, destruction or damage of marine plants. Suggested Solution Relevant approvals (i.e. land owner's consent) and relevant authorities under the Land Act 1994 to access and use the land for the duration of the project must be obtained prior to any development application being lodged								
Key Resource Area 10 – Barron Flats	**General Advice** Prior to works commencing (i.e. the placement of dredge material), the proposed fill area will be expanded to the north and east to increase the storage capacity of soft clays removed during dredge operations. The expansion will occur within the resource/processing area of Key Resource Area (KRA) 10. **Suggested Solution** The expansion will extract the remaining identified sand resource at the site. As the proposal will not sterilise any identified sand resource at the site, DNRM has no objection to the placement of dredge spoil within KRA 10.	X							Noted
Additional Consideration	**Actual Acid Sulfate Soils/Potential Acid Sulfate Soils** The EIS describes a range of potential impacts resulting from the exposure of potential acid sulfate soils (PASS) and actual acid sulfate soils (AASS).						X		Management, monitoring and mitigation of acid sulfate soil impacts will be stipulated in the Environmental Authority (ERA 16) to be negotiated and approved prior to project commencement. An Acid Sulfate management Plan for the project will be developed to support such applications and for implementation for managememt of

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	The acid present and additional acid generated when disturbance or dewatering occurs can, if not neutralised by treatment, adversely affect plant growth and kill fish in affected streams. The potential damage to the environment is significant due to the very large volumes of material anticipated to be disturbed directly by excavation and, potentially, indirectly through dewatering. **Suggested Solution** Should the State wish to set conditions for the management of ASS at the DMPAs (rather than leave this matter to Cairns Regional Council under the State Planning Policy), DNRM recommends an Acid Sulfate Soil Management Plan be prepared, including detailed information addressing the treatment of excavated soils/sediments and groundwater management. As DNRM did not receive a formal request for advice from the Coordinator General, the Department of Environment and Heritage Protection is providing further advice on this issue.								PASS isseus at each of the project sites.

2.6 Department of Fire and Emergency Services

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	The Queensland Fire and Emergency Services (QFES) has reviewed the revised draft EIS, raising no further issues with content. **Suggested Solution** Going forward, QFES Far North Region requests continued consultation into the detailed design, construction and operational phases of the project, contact details for the appropriate officer:	**X**							Noted

2.7 Department of Transport and Main Roads

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Flood Impacts	The Department of Transport and Main Roads (TMR) has reviewed the proponent's revised draft environmental impact statement (RDEIS) and is generally satisfied with the proponent's impact assessment information and proposed mitigation measures. One issue that requires further investigation and potential mitigation is in regards to one of the dredge disposal sites for the Cairns Shipping Development Project adjacent to the Captain Cook Highway, a state-controlled road. Chapter B17 - Hazard and Risk in conjunction with Appendix AD Flood and Dredge Spoil Mobilisation - Northern Sands provides Barron River delta flood levels and generally considers the impacts on flood levels and velocities. However, a key component of the flood modelling that the EIS report does not take into account or report is: what are the effects of flood velocity and increased water levels on the Captain Cook Highway? **Suggested Solution** To ensure flood immunity is not worsened and stormwater impacts of the development are adequately managed, the proponent must update Appendix AD Flood and Dredge Spoil Mobilisation - Northern Sands to further investigate and demonstrate that flood storage, flood velocity and water levels (change in flood height) from the Dredge Material Placement Zone (DMPA) associated with the Cairns Shipping Development Project will have a no-worsening impact on the Captain Cook Highway, 3 months prior to commencement of the project.		X						As identified in Chapter B17 Section B17.4.1.f the project will create minimal afflux or impacts on the safety and efficiency of the Captain Cook Highway bund heights of 7.5m AHD; velocities in the order of 0.5m/s are anticipated which will not result in damage to the road surface.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	This investigation may require preparation of Flood and Stormwater Management Plan to be prepared and any impacts to be mitigated.								
Standard Conditions	**Suggested Solutions** To ensure efficient processing of the project's required transport-related permits and approvals, the proponent must, no later than three (3) months, or such other period agreed in writing with TMR and Cairns Regional Council, prior to the commencement of significant construction works or project related traffic: (a) obtain all relevant licenses and permits required under the Transport Infrastructure Act 1994 for any works within the state-controlled road corridor (s33 for road works approval, s62 for approval of location of new or changed vehicular accesses to state roads and s50 for any structures or activities to be located or carried out in a state-controlled road corridor). For example, consideration will need to be given to the construction of temporary access works on Holloways Beach Road and Yorkeys Knob Road and the provision of traffic controllers to facilitate safe access and egress of the heavy vehicles; (b) prepare a Traffic Management Plan (TMP) in accordance with TMR Cairns District office (and Cairns Regional Council) requirements. The TMP must be prepared and implemented during the construction and commissioning of each site, where works in or near state roads are to be undertaken, for example, when constructing or laying dredge material pipeline crossings under state roads. The TMP should consider road-use at site access points, road intersections or where works are undertaken in state-controlled road corridors; (c) the TMP is also required to confirm haulage vehicle configurations, routes, timing, escort requirements and manoeuvrability through intersections on the state-controlled road network through the TMR permitting process, as listed in Table B14-12 of the July 2017 RDEIS Traffic report;	X							Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	(d) prepare a Heavy Vehicle Haulage Management Plan for any excess-mass or over-dimensional loads for all phases of the project, in consultation with TMR's Cairns District office, the Queensland Police Service and Cairns Regional Council.								
Standard Conditions	Development Condition – Council Approval 8/8/1468 (advice only) The approved Council development 8/8/1468 (Extension to Extractive Industry) has been conditioned by SARA (SDA-0117-036724) to include a condition to protect the Future Public Passenger Transport Corridor (Cairns Transit Network). The condition states "Retain at least a 50m set back from the Future Public Passenger Transport Corridor as mentioned under item #2 of the pre-lodgement advice responses included in the report titled 'Northern Sands: Lot 5 On SP245573 Expansion". **Suggested Solution** To ensure that the Cairns shipping development project does not compromise the Future Public Passenger Transport Corridor, TMR requires that this condition is met also by the Cairns shipping development project.		X						The Northern Sands DMPA Design concept will comply with the requirement for a set back of at least 50m from the Cook Highway corridor
Standard Conditions	Recommendation maritime safety conditions **Suggested Solution** *Post-Assessment contact with the Department of Transport and Main Roads* Once the proponent has received final approval and wishes to proceed with the project, it must contact the Regional Harbour Master before anyworks/ shipping starts, to discuss mitigating any shipping safety, traffic and pollution impacts of the project. This includes shipping traffic for the import of any materials for construction. Any management plans or other mitigation measures for these issues required by the Regional Harbour Master and Maritime Safety Queensland must be discussed, prepared and approved as necessary.	X							Noted Ports North will liaise with DTMR and develop the necessary management plans; it is noted that a Framework Vessel Transport Management Plan was submitted as Chapter C3 of the Revised Draft EIS.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	Maritime infrastructure The proponent must implement all impact mitigation measures necessary to avoid adverse impacts on the safety, condition and efficiency of shipping in Queensland waters. Discussions must take place with the Regional Harbour Master to determine any required measures and an Aids to Navigation plan developed and approved if required. A Maritime Infrastructure Agreement may also be required and need approval from the Regional Harbour Master and Maritime Safety Queensland in conjunction with this. Any plans and agreements must be in place and approved before the project begins construction. *Maritime safety, traffic and ship-sourced pollution impact assessments* Discussions must take place with the relevant Regional Harbour Master about maritime safety, traffic and ship-sourced pollution impacts from the project. The following plans must be developed by suitably qualified people to be approved by the relevant Regional Harbour Masters if deemed necessary: • Marine execution plan • Vessel traffic management plan • Aids to navigation management plan • Ship-sourced pollution prevention management plan Any plans and agreements must be in place and approved before the project begins construction.								

2.8 Department of Agriculture and Forestry

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Chapter A4 – Legislation and approvals	**(S-A4.5.1, pgA4-17)**The Revised Draft EIS does not include reference to the Queensland Environmental Offsets Policy which acts as a decision-support tool to enable administering agencies to assess offsets proposals to ensure they meet the requirements of the Environmental Offsets Act 2014. **Suggested Solution** Amend the 'Relevant Plans and Policies' section to include 'Queensland Environmental Offsets Policy'	X							Noted
Chapter A4 – Legislation and approvals	**(S-A4.6.2, pgA4-29)** Within the document it is stated that the proposed works involve the removal, destruction or damage of marine plants which are protected under the Fisheries Act 1994 and constructing or raising waterway barrier works, however these approvals have not been mentioned in this section. **Suggested Solution** Amend the 'State Government' component of the 'Approvals' section to include 'Operational works for the removal, destruction or damage of marine plants and operational works involving constructing or raising waterway barrier works.' Amend section to clarify that Operational policy: Fish Habitat Area selection, assessment, declaration and review is a NPSR policy, not a DAF policy.	X							Noted in Chapter A4 Table A4-2
Chapter A4 – Legislation and approvals	**(S-A4.4.8.b, pgA4-10)** It is stated that the development will '…require assessment by Fisheries Queensland against the State Development Assessment Provisions – Module 5: Fisheries resources.'	X							Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	Suggested Solution The SDAP v2.0 has since been implemented under the new Planning Act 2016, and this statement is no longer correct. Amend to state the 'State Development Assessment Provisions: □ State Code 11 – Removal, destruction or damage of marine plants; □ State Code 12: Development in a declared Fish Habitat Area; and □ State Code 18: Constructing or raising waterway barrier works in fish habitats.'								
Chapter A4 – Legislation and approvals	**(S-A4.5.8.a, pgA4-21)** The following policies are referenced which are no longer current: • management of declared fish habitat areas (FHMOP 002); • marine fish habitat offset policy (FHMOP 005.2); • fish habitat area selection and assessment (FHMOP007); • waterway barrier works approvals and fishway assessments: Departmental procedures (FHMOP 008) • restoration notices for fish habitats - formulation and implementation: Departmental procedures (FHMOP 009) **Suggested Solution** • Amend to remove references to these policies. • Amend to include the following policies: • Operational policy: Management of declared Fish Habitat Areas; • Operational policy: Fish Habitat Area selection, assessment, declaration and review .	X							Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Chapter A4 – Legislation and approvals	**(S-A4.5.8.b, pgA4-21)** It is stated that 'FHMOP 004 does not support dredging within a declared FHA.' **Suggested Solution** Amend to remove references to these policies. Amend to include the following policies: • Operational policy: Management of declared Fish Habitat Areas; • Operational policy: Fish Habitat Area selection, assessment, declaration and review.	X							Noted
Chapter A4 – Legislation and approvals	**(S-A4.5.8.b, pgA4-21)** It is stated that 'FHMOP 004 does not support dredging within a declared FHA.' **Suggested Solution** Amend this table to reference the current SDAP.	X							Noted
Chapter A4 – Legislation and approvals	**(S-A4.6.4.a, Table A4-2, pgA4-30)** It is stated that the proposed placement of dredge spoil is likely to result in the removal, destruction or damage of marine plants. It is also stated that components of the Northern Sands delivery pipeline occurs within the Yorkeys Creek declared Fish Habitat Area, which are not subject to proposed revocation of the FHA boundaries Declared Fish Habitat Areas are areas declared under the Fisheries Act 1994 however are often confused with areas containing fish habitat (e.g. areas containing marine plants). **Suggested Solution** Amend to include the destruction of marine plants found within the dredge spoil disposal area. Amend to include that a Resource Allocation Authority under the Fisheries Act 1994 is required to undertake works within a declared Fish Habitat Area.	X							Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	Amend references to 'Trinity Inlet Fish Habitat Area' and 'Yorkeys Creek Fish Habitat Area' to 'Trinity Inlet declared Fish Habitat Area' and 'Yorkeys Creek declared Fish Habitat Area.'								
Chapter A4 – Legislation and approvals	**(S-B7.2.3, pgB7-5)** Declared Fish Habitat Areas are areas declared under the Fisheries Act 1994 however are often confused with areas containing fish habitat (e.g. areas containing marine plants). **Suggested Solution** Amend references to 'Trinity Inlet Fish Habitat Area' and 'Yorkeys Creek Fish Habitat Area' to 'Trinity Inlet declared Fish Habitat Area' and 'Yorkeys Creek declared Fish Habitat Area.	X							Noted
Chapter A4 – Legislation and approvals	**(S-B7.2.6.b, Figure B7-31, pgB7-50) Figure B7-31** depicts an algal community within the footprint of the existing channel. **Suggested Solution** The Proponent should provide further information to allow DAF to determine whether the proposed installation of the mooring will result in the removal, destruction or damage of marine plants.	X							Noted
Chapter A4 – Legislation and approvals	**(S-B7.3.3.a, pgB7-90, Seagrass)** It is stated that 'the dredge footprint does not presently support seagrass meadows. Approximately 9 ha of the dredge footprint overlaps with seabed areas that have previously supported seagrass and as such, these areas represent potential habitat for seagrass. Of the 9 ha of historic seagrass within the new channel footprint, 6 ha of this falls within the existing footprint, predominantly in areas affected by the widening. Seagrass in the dredge footprint is ephemeral Halodule uninervis, with periodic detections during times of favourable conditions with detections in the mid 2000's and again most recently in 2016 (Ports North, pers. com).'	X							Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	Suggested Solution Any seagrass proposed to be disturbed within the proposed dredge area (however sporadic) will require a development approval for the operational works that is the removal, destruction or damage of marine plants.								
Chapter A2 – Project Background	**(S-A2.6.2.d, pgA2-47, first dot point)** It is stated that 'during the initial stages of dredge material placement (within the Northern Sands DMPA), overflow of displaced void water with elevated nutrients may impact on Barron River. Also, the relatively fresh void water may be difficult to flocculate, resulting in discharge of more turbid tailwater.' **Suggested Solution** The Proponent should provide information as to how fish kills will be avoided/managed and responded to in the discharge of tailwater from the Northern Sands site. The Proponent should include the marine plants potentially disturbed as a result of proposed discharge in their operational works application for the removal, destruction or damage of marine plants.						X		Any discharge will comply with the Water Quality limits established as part of the stated conditions for the EA for ERA 16 (Dredging) Lake Narelle (the Northern Sands site) to be used as a DMPA is not connected by surface water connection to adjacent Barron River or Thomatis Creek, and is only connected in very rare extreme flood levels. It is a non-natural gravel quarry void subject to the regular disturbance from quarry activity and licensed placement of waste into the Lake. Observations by staff engaged to conduct water quality sampling in preparation of the EIS indicates no observed fish population. Discharge quality within the EA condition schedules will be set so as to avoid fish kills at the tailwater discharge location, with an emphasis on monitoring of salinity, ph, turbidity and metals. Potential impacts to fish, including tailwater discharge modelling and impacts of associated salinity and turbidity are presented in Chapter B7 and tailwater, water quality and marine ecology mitigation measures outlined in section C2.8.2 of the Dredge Management Plan. Operational works application for the tailwater discharge point will identify disturbance of Marine Plants (if any). The design and choice of discharge equipment will be based on impact avoidance such that disturbance of marine plants will be avoided or minimized at the location near Captain Cook Highway Barron River bridge. .
Vegetation Marine	**(S-A2.6.2.d, pgA2-48**, first dot point) Constraints and opportunities assessment identified in the Marine Report are: • First dot point **Suggested Solution** These plants may constitute marine plants as defined under the Fisheries Act 1994. The Proponent should include the marine plants	X							Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	potentially disturbed as a result of proposed discharge in their operational works application for the removal, destruction or damage of marine plants.								
Vegetation Marine	**(S-B2.3.2, pgB8-6)** The Fisheries Act 1994 not only manages commercial fishing but also recreational and indigenous fishing. No reference is made to these sectors of the community. **Suggested Solution** Amend the 'habitat for species of commercial (e.g. fishing) significance of the 'Existing Situation' section to read as 'habitat for species of commercial, recreational and indigenous (e.g. fishing) significance.	X							Noted
	(S-B2.3.4.d, pgB8-28) and (B7.2.3, pgB7-5) Declared Fish Habitat Areas are areas declared under the Fisheries Act 1994 however are often confused with areas containing fish habitat (e.g. areas containing marine plants). **Suggested Solution** Amend references to 'Trinity Inlet Fish Habitat Area' and 'Yorkeys Creek Fish Habitat Area' to 'Trinity Inlet declared Fish Habitat Area' and 'Yorkeys Creek declared Fish Habitat Area.'	X							Noted
Chapter A3 – Project Description	**(S-A3.2.3.a, pgA3-9 to A3-11)** It is stated that the 'dredge material pump out facility will be located between 2.7 and 3.7 km offshore from Yorkeys Knob' and that 'the pump out facility will involve a temporary mooring that will facilitate the connection of the TSHD via its bow coupling to a floating section of the dredged material pipeline' **Suggested Solution**		X						As identified in Revised EIS Appendix AO marine ecology surveys of thedrege mooring point/ pump out facility area did not identify presence of marine plants.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	The Proponent should provide further information to allow DAF to determine whether the proposed installation of the mooring will result in the removal, destruction or damage of marine plants.								
Chapter A3 – Project Description	**(S-A3.6, Table A3-5, pgA3-32)** Section B2 Nature Conservation Areas lists the Proponents proposed environmental strategies for areas including declared Fish Habitat Areas. **Suggested Solution** Amend the section B2 Nature Conservation Areas to include appropriate measures that will prevent impacts to the section of the Trinity Inlet declared Fish Habitat Area adjoining the Tingira Street DMPA.		X				X		Measures to prevent impact to the Trinity Inlet declared FHA are provided in Chapters B5 Marine Water Quality, B6 Water Resources, B7 Marine Ecology, B8 Terrestrial Ecology, C1 (CEMP) and C2 (Dredge Management Plan) A plan showing proposed changes to the FHA will be provided in the Supplementary Report
Chapter A3 – Project Description	**(S-A3.6, Table A3-5, pgA3-32 to A3-33)** Section B7 Marine Ecology lists the Proponent's proposed environmental strategies regarding marine ecology. **Suggested Solution** Amend section B7 Marine Ecology to include that dredging operations will cease when a dredge plume extends within 50m of seagrass meadows and will not recommence until the plume recedes to more than 50m away from seagrass meadows.						X		As noted in Chapter C3 Dredge Management Plan Section C2.8.2.b, a detailed Reactive Monitoring Program will be developed and approved by an independent Expert Advisory Panel. It is considered that sedimentation issues have been adequately addressed in the Revised Draft EIS. It is recognised that thresholds may differ for "new growth" seagrass. Content of the RD-EIS was reviewed and additional input was obtained from JCU on seagrass susceptibility and resilience issues. Imposition of prescriptive plume limits as stated in this submission are not practical and do not represent best practice or reflect contemporary approach to mananging dredging in the vicinity of marine flora such as seagrass. Requirements for management, monitoring and mitigation of water quality impacts will be included in the draft stated conditions for the Environmental Authority for ERA 16 (Dredging) to be provided in the Supplementary Report
Marine Ecology	**(S-B7.4 and S-B7.4.3, pgB7-121)** It is stated in this section that the zone of influence also coincides with known (as mapped in 2015) and historic seagrass meadows. Seagrass and other marine plants are protected under the Fisheries Act 1994. Increased						X		As above. Imposition of prescriptive plume limits as stated in this submission are not practical and do not represent best practice or reflect contemporary approach to mananging dredging in the vicinity of marine flora such as seagrass.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	turbidity as a result of dredging activities may cause the indirect disturbance of these meadows. **Suggested Solution** Amend the section 'Recommended Mitigation Measures' to include that dredging operations will cease when a dredge plume extends within 50m of seagrass meadows and will not recommence until the plume recedes to more than 50m away from seagrass meadows.								Requirements for management, monitoring and mitigation of water quality impacts will be included in the Stated conditions for the Environmental Authority for ERA 16 (Dredging) As noted in Chapter C3 Dredge Management Plan Section C2.8.2.b, a detailed Reactive Monitoring Program will be developed and approved by an independent Expert Advisory Panel.
Marine Ecology	**(S-B7.4.7, Table B7-22, pgB7-125)** It is stated that the Proponent will undertake 'seagrass surveys to confirm presence of unpredicted seagrass. If detected, seagrass impacts resulting in permanent loss will be offset in accordance with Environmental Offsets Act.' **Suggested Solution** DAF advise that an offset condition should be applied to the Coordinator-Generals report requiring that any impacts to seagrass as a direct or indirect result of the dredging works must be offset pursuant to the Environmental Offsets Act 2014.		X						As discussed in Chapter C2 Dredge Management Plan the Reactive Monitoring Program to be approved by an Expert Advisory Panel includes a pre-dredging seagrass survey. The need for offsets as a result of seagrass removal will be determined following this survey.
Marine Ecology	**(S-B7.4.7, Table B7-22, pgB7-125)** No additional mitigation measures have been provided or the potential impacts to commercial fisheries from habitat modification. **Suggested Solution** Amend the 'Additional mitigation measures proposed' section of Table B7-22 for impacts to commercial fisheries section to state a fisheries adjustment will be provided to affected commercial fisheries as per DAF's Guideline on Fisheries Adjustment as a Result of Development.						X		The assessed and reported impact is Low, however the proposed area expansion of the channel is within the existing leads and declared channel navigation zone. Commercial Fishing activities (net or trawl) are currently not permitted in the channel area and hence there is no loss of commercial fishing opportunity. The extent of habitat modification in an ecological sense is effectively only the removal of the upper surface sediment layer which will be re-established within annual siltation cycles as evidenced by Ports Norths long history of annual channel surveys and maintenance dredging requirements. Recolonization and recovery rates are therefore expected in the short term as evidenced in previous studies.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Marine Ecology	**(S-B7.4.7, Table B7-22, pgB7-125)** Increased turbidity as a result of dredging activities may cause the indirect disturbance of seagrass meadows. **Suggested Solution** Amend the 'Additional mitigation measures proposed' section of Table B7-22 to state that the Dredge Management Plan will include measures to ensure dredging operations will cease when a dredge plume extends within 50m of seagrass meadows and will not recommence until the plume recedes to more than 50m away from seagrass meadows.						X		Impact zone thresholds have been developed from published case studies and guideline values supported by additional input from James Cook University) and integrated with revised modelling of reduced zones of impact. Threshold values will be reviewed by an Expert Advisory Panel to be established prior to dredging commencing and confirmed with regulators. Dredging and Construction Environmental Management Plans are included in the Revised Draft EIS which provide a framework for managing the key risks identified. These Plans will be refined as part of detailed design and incorporate relevant CGER stated and imposed conditions and any associated "downstream" approval conditions. The Plans will include subordinate issue-specific Environmental Management Plans to address impacts to marine ecology. Imposition of prescriptive plume limits as stated in this submission are not practical, and do not represent best practice, or reflect the contemporary approach to managing dredging in the vicinity of marine flora such as seagrass. As stated in the RD-EIS Chapter B7 and supporting Appendices the channel and inner port project areas are subject to annual maintenance dredging and the presence of dredge generated, as well as natural tidal and flood plumes, which are an existing aspect of Trinity Bay which the marine benthic flora are subject to. Requirements for management, monitoring and mitigation of water quality impacts will be included in the draft Stated conditions for the Environmental Authority for ERA 16 (Dredging) to be included in the Supplementary Report.
Chapter 8 – Terrestrial Ecology	**(S-B8.3, pgB8-9 to B8-50)** It is stated that 0.8 ha of marine plants may be impacted at the Tingira Street Dredge Material Placement Area (DMPA). It is also stated that the Northern Sands DMPA contains mangrove and Melaleuca woodland. **Suggested Solution** The Proponent should clarify whether the proposed placement of dredge spoil in this area involves the removal, destruction or damage of marine plants or has the potential to limit the natural recruitment of marine plants.						X		Ports North has the necessary permits in place for marine plant removal at the proposed Tingira Street southern barge access ramp. It also has a Development Permit 2006CA0478 (Marine Plant Disturbance) for disturbance of marine plants during maintenance of the port including areas subject to dredging; (the channel) and placement of material (ocean disposal site); The extent to which this existing permit covers the proposed capital dredging area will be reviewed,as it is expected to cover most or all of it. This will be clarified to confirm if amendments of approved drawings are required to facilitate the proposed CSDP project. Ports North will consult with DAF in relation the need and extent of marine plant permit requirements. Annual surveys of marine plants (seagrass) are conducted by JCU and verify the status of seagrass in all areas adjancnet to the channel and inner port areaas. Additional detailed marine plant surveys will be conducted during the detailed design phase to guide disturbance minimization; for areas that can't be

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The Proponent should seek further advice from DAF as to whether the proposed works (i.e. placing of dredge material) would constitute maintenance of an existing lawful structure. If not, the proposed works within the Tingira Street DMPA (and Northern Sands DMPA if applicable) should be amended to avoid the placement of material on tidal lands (below the level of Highest Astronomical Tide; HAT) and marine plants. Fisheries Queensland recommend that a condition is applied to the Coordinator General's report stating that 'Impacts to marine plants associated with the placement of dredge material should be avoided, and where this cannot be reasonably achieved, mitigated. Should the placement of dredge spoil result in a significant residual impact to marine plants following efforts to firstly avoid and/or mitigate, an offset must be provided pursuant to the Environmental Offsets Act 2014.'								avoided appropriate clearing permits will be sought. Should detailed Tingira Street planning result in a significant residual impact to marine plants following efforts to firstly avoid and/or mitigate, an offset application will be sought as part of Operational Works applications. Land under tidal water (tidal land) is land lying below the high-water mark (HWM), which is referenced as the level of the mean high water at spring tide (MHWS) or mean highest high water (MHH) within the sea or the waters of any harbour, including any navigable river and any tidal waterway. Tingira Street doesn't lie within the sea or waters. The land (reclaimed under reclamation order and subsequently settled to below HAT in some places) should NOT be defined as TIDAL LANDS as it is not subject to daily tidal inundation. The land received inflow of seawater only on abnormally high tides as does much of the Cairns CBD area and the DAF office driveway in Tingira Street.
Chapter 8 – Terrestrial Ecology	**(S-B8.3.3, pgB8-31 to B8-47)** It is stated that approximately 0.5ha of marine plants will be disturbed during the placement of the delivery pipeline. Marine plants are protected under the Fisheries Act 1994. **Suggested Solution** Fisheries Queensland recommend that a condition is applied to the Coordinator General's report stating that 'Impacts to marine plants associated with the placement of the delivery pipeline should be avoided, and where this cannot be reasonably achieved, mitigated. Should the placement of the delivery pipeline result in a significant residual impact to marine plants following efforts to firstly avoid and/or mitigate, an offset must be provided pursuant to the Environmental Offsets Act 2014.'	X					X		Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Chapter 8 – Terrestrial Ecology	**(S-B8.3.3.g, pgB8-49, last paragraph)** It is stated within the application that 'the site survey more correctly identified this area as a Melaleuca swamp (7.3.25a (riverine wetland) / 7.2.9.b (palustrine wetland). Although it is considered that this Melaleuca swamp has relatively limited value as a fisheries habitat, it does meet the definition shown above and arguably could be defined as containing marine plants. Taking the precautionary principle, the Melaleuca swamp will be included as a marine plant area for the purposes of the CSD Project.' **Suggested Solution** DAF advise that Melaleuca wetlands adjacent to tidal lands are likely to be considered marine plants The Proponent should clarify the proximity and hydrological connectivity of this Melaleuca wetland to HAT. Should the plants in this area constitute marine plant, include the removal, destruction or damage of marine plants in this area in an application for operational works that is the removal, destruction or damage of marine plants. DAF recommend an offset condition be applied to the Coordinator Generals report for the removal, destruction or damage of marine plants.	X					X		Noted Ports North will confirm the 'fisheries value' of the *Melaleuca* community at the mouth of Richters Creek as discussed in Chapter B8.3.3g (p 49); the need for an offset for any removal will be negotiated if required.
Chapter 8 – Terrestrial Ecology	**(S-B3.3.3.g, pgB8-50)** It is stated that at the Tingira Street DMPA, the mangrove species that are regenerating within Site 2 are marine plants. 'These plants will be cleared as a result of the project.' Fisheries Queensland does not support the placement of dredge spoil on tidal lands (unless within an existing approved dredge spoil disposal area) as alternatives of lesser impacts to fish habitats exist (i.e. placement on terrestrial lands).	X					X		Ports North considers that the removal marine plants at this location represents maintenance of an existing lawful use. The Tingira Street location is Strategic Port Land, zoned for Marine Industry development under the Ports North Land Use Plan and was filled under s91 of the Harbours Act, Authority to Reclaim Land issued by DEHP in 1996 which required filling up to RL 2.3m and subsequently amended to allow filling to a minimum level of RL2.0m AHD. The site was subject of a s86 approval for the protective works upon which each agency including DPI provided approval in respect of marine plant disturbance. Site 2 was filled to the lower level, mostly with dredged material, and has consolidated and settled to below HAT in parts

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	Suggested Solution The Proponent should clarify whether the proposed placement of dredge spoil in this area involves the removal, destruction or damage of marine plants. The Proponent should seek further advice from DAF as to whether the proposed works would constitute maintenance of an existing lawful structure. If not, the proposed works within the Tingira Street DMPA (and Northern Sands DMPA if applicable) should be amended to avoid the placement of material on tidal lands (below the level of Highest Astronomical Tide; HAT) and marine plants. Fisheries Queensland recommend that a condition is applied to the Coordinator Generals report stating that 'Impacts to marine plants associated with the placement of dredge material should be avoided, and where this cannot be reasonably achieved, mitigated. Should the placement of dredge spoil result in a significant residual impact to marine plants following efforts to firstly avoid and/or mitigate, an offset must be provided pursuant to the *Environmental Offsets Act 2014*.'								over the last 2 decades.
Chapter 8 – Terrestrial Ecology	**(S-B8.4.4.d, pgB8-86)** It is stated that 'based on the alignment as currently proposed, it is estimated that approximately 0.11 ha of mangrove vegetation will be cleared for the location of the discharge pipeline Option B.' **(S-B8.4.4.d, pgB8-86)** It is stated that 'some disturbance to the remnant mangrove vegetation (RE7.1.1 – LC) associated with Richters Creek will be unavoidable where the pipeline crosses the creek. Based on the alignment as currently proposed, it is estimated that approximately 0.16 ha of mangrove vegetation will require clearing in this location.'	X					X		Noted. Extent of required mangrove disturbance at tailwater discharge point to the Barron River, proposed to be in vicinity of Captain Cook Highway Barron River Bridge, will be subject to outcomes of the detail design phase and included in the application for Operational Works- Marine Plant Disturbance. S-B8.4.4.d, pgB8-86) stats that 'based on the alignment as currently proposed, it is estimated that approximately 0.11 ha of mangrove vegetation will be cleared for the location of the discharge pipeline, however optimization of design will likely confirm that this is an overestimate of required area of disturbance. Detailed calculation of marine plant disturbance footprint is to be included in the application for Operational Works- Marine Plant Disturbance.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	(S-B8.4.4.d, pgB8-86) It is stated that 0.14 ha of the Melaleuca wetland at Richters Creek will require clearing. **Suggested Solution** This amount of marine plants disturbance alone is likely to result in a significant residual impact to marine plants. DAF recommends an offset condition is applied to the Coordinator Generals report requiring that all impacts to marine plant that cannot be avoided and/or mitigated are offset pursuant to the Environmental Offsets Act 2014.								
Chapter 8 – Terrestrial Ecology	**(S-B8.4.4.e, pgB8-87, 1st paragraph)** It is stated that 'assuming that the mangrove vegetation adjacent to the sites is not impacted, the clearing at Site 1 will consist of approximately 4.17 ha of anthropogenic grassland, while at Site 2, approximately 0.76 ha of non-remnant (tidally influenced) land will be cleared.' This Lot adjoins the Trinity Inlet declared Fish Habitat Area. **Suggested Solution** This Tingira Street DMPA adjoins the Trinity Inlet declared Fish Habitat Area. The placement of spoil in the Tingira Street DMPA must be managed to avoid impacts within the FHA.		X				X		Minimisation of impacts to the adjoining Trinity Inlet FHA are identified in Chapters B7 Marine Ecology, B8 Terrestrial Ecology C1 CEMP and C2 Dredge Management Plan; these will be further developed in the Dredge Contractor procurement and detailed design phase. Lot 27 on SP218291 upon which the Tingira Street DMPA is proposed, shares a congruent boundary at its southern boundary with the Trinity Inlet Declared Fish Habitat Area. The placement of spoil in the Tingira Street DMPA will be managed to avoid impacts as no works or disturbance within the FHA are proposed.
Chapter 8 – Terrestrial Ecology	**(S-B8.4.4.e, pgB8-87, 1st paragraph)** It is stated that 'it is assumed that areas of remnant mangrove vegetation within the Northern Sands project area, the Option A* discharge and the mangroves at bordering the Tingira Street study area will not be cleared. However some marine plants are likely to be cleared at both Northern Sands project area and Tingira Street study area as a result of the project.' **Suggested Solution** The Proponent should confirm whether marine plants will be removed, destroyed or damaged at the Tingira Street DMPA and Northern Sands DMPA.	X					X		Noted – Will be addressed at Operational Works application stage. There are no marine plants at the Northern Sands DMPA site proposed for disturbance, however as identified, areas of pipeline access to and from the Northern Sands DMPA site will require disturbance to marine plants. Mangroves bordering the Tingira St site are not proposed for disturbance, with the only area of marine plants proposed to be disturbed being regrowth mangroves on an area subject to historical approval for marine plant disturbance as an existing lawful structure/reclamation. Detailed calculation of marine plant disturbance footprint is to be included in the application for Operational Works-Marine Plant Disturbance.
Chapter 8 – Terrestrial Ecology	**S-B8.4.4.e, pgB8-87, 4th paragraph)** It is stated that 'mitigation is not required in the Northern Sands Project Area and not feasible at the Tingira Street DMPA due to the intended end use of the site as an industrial	X					X		Noted. It is also noted that Ports North holds very limited remaining land area available for future port development. The Tingira Street land holding are the largest remaining undeveloped waterfront land. Land Use Planning in relation to this area dates back to

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	hardstand.' **Suggested Solution** The Proponent should clarify whether the proposed placement of dredge spoil or the construction of non-marine dependent infrastructure involves the removal, destruction or damage of marine plants. Fisheries Queensland recommend that a condition is applied to the Coordinator Generals report stating that 'Impacts to marine plants should be avoided, and where this cannot be reasonably achieved, mitigated. Should the proposed works result in a significant residual impact to marine plants following efforts to firstly avoid and/or mitigate, an offset must be provided pursuant to the Environmental Offsets Act 2014.'								the Trinity Inlet Management Plan, which predated the current State Land Use planning process, and resultant designations (including the need for some future Port Land to be retained and for conservation of other habitat areas, including Admiralty Island which was relinquished from further Port use). Detailed calculation of temporary marine plant disturbance footprint for the pipeline access or any areas of permanent marine plant loss due to placement of dredge spoil or the construction of non-marine dependent infrastructure, and to be included in the application for Operational Works-Marine Plant Disturbance.
Chapter 8 – Terrestrial Ecology	**(S-B8.4.6.e, pgB8-89)** It is stated that 'the Northern Sands delivery pipeline corridor will cross sections of Richters Creek mapped as a Major (Estuary) waterway. The proposed methodology for the construction of the pipeline does not required a temporary waterway barrier and is therefore likely to be compliant with the self-assessment code with no further mitigation required.' **Suggested Solution** The Proponent should clarify the method of construction for the proposed northern sands delivery pipeline to allow DAF to determine whether the proposed works would constitute waterway barrier works and if so, whether works would be considered 'assessable' or 'accepted' development. Note: Self-assessable codes are no longer current and have been transitioned to accepted development requirements. All references to self-assessable codes should be amended. Prior to offsets being considered, the Proponent must firstly demonstrate that impacts have been avoided and where this cannot be reasonably achieved, mitigated.						X		Additional detailed surveys will be conducted during the detailed design phase to guide minimization of impacts to marine ecology by the pipeline corridor. Ports North will consult with DAFF in relation to accepted development requirements triggered by the pipeline crossing of Richters/Thomatis Creek. The proposed pipeline corridor route and description are shown in Chapter A3 Figure A3-3 and chapter A3 p12 respectively. Potential impacts of various construction related elements of the pipeline are addressed in the technical chapters (B Chapters) and management and mitigation measures identified in the Management Plans (Chapters C1 and C2). Additional construction details will be provided during the design and contractor procurement phase with further imact management and mitigationmeasures to be provided as part of downstream approval applications .

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Only once this has been demonstrated will offsets be considered.								
Chapter 8 – Terrestrial Ecology	**(S-B8.6.4.c, pgB8-102, Last paragraph of this section)** It is stated that 'the major (not able to be mitigated) risk to an MSES is the clearing of approximately 0.76 ha of non-remnant (tidally influenced) land at the Tingira Street DMPA. Schedule 2 Section 11 (2) states that 'a marine plant is not an MSES if the plant is in an urban area'. Based on the Regional Landuse Categories as set out in the FNQ Regional Plan 2009-2031, the Tingira Street DMPA is part of the urban footprint of Cairns. Therefore the marine plants at Tingira Street are not MSES under the Environmental Offsets Regulations 2014 and do not require an offset.' **Suggested Solution** DAF is of the view (and previous determinations through DILGP have concluded) that strategic port land is not an urban area for the purposes of the Environmental Offsets Act 2014 and does not meet the definition of an urban area under the Planning Regulation 2017. Under the Planning Reg, urban areas are defined as: an area identified in a gazette notice by the chief executive as an urban area; or if no gazette notice has been published—an area identified as an area intended for an urban purpose, or for an urban purpose in the future, on a map in a planning scheme that— identifies the area using cadastral boundaries; and is used exclusively or mainly to assess development applications. Example of a map for paragraph (b)— a zoning map For this reason, should the proposed works at the Tingira Street DMPA result in a significant residual impact to marine plants, an offset will be necessary and should be conditioned.						X		Ports North notes that the land is designated as Strategic port land. The *Transport Infrastructure Act* 1994 does not include a definition for urban area or urban land. The State Planning Policy – state interest guideline Strategic Ports April 2016 was drafted to assist local government integrate strategic ports into the local government planning scheme. The guideline includes a number of policies about integrating the State interest in the planning scheme , including but not limited to: • Strategic port land is to be identified in the planning scheme; • Local government should promote the use of land surrounding the strategic ports for development that gains economic advantage from being in proximity to a strategic port or supports the role of the strategic port Notwithstanding the above, the *Planning Act 2016* defines an urban area as an area identified in a gazette notice by the chief executive as an urban area; or if no gazette notice has been published – an area identified as an area intended for an urban purpose, or for an urban purposes in the future on a map in a planning that – • identifies the area using cadastral boundaries; and • is used exclusively or mainly to assess development applications. The *Planning Regulation 2017* defines urban purpose as a purposes for which land is used in cities or towns including residential, industrial, sporting, recreation and commercial purposes; but not including rural residential, environmental, conservation, rural, natural or wilderness area purposes. CairnsPlan 2016 v1.1 includes the Port of Cairns as urban land on the strategic framework map. Development on strategic port land is the responsibility of the Port Authority, who is the assessment manager for development undertaken on strategic port land in accordance with the provisions of the Planning Act 2016 and the Planning Regulations 2017. Generally Land Use Plans for Strategic Ports are prepared consistent with the planning legislation in force at that time. The Far North Queensland Regional Plan also includes the Port of Cairns within the Urban Footprint.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									Ports North considers that Strategic Port Land is urban land or an urban area for the following reasons: • The Transport Infrastructure Act 1994 defines strategic port land and how it may be used. Land use plans include current and proposed land uses. • An urban area is an area that has been gazetted by the Chief Executive as an urban area and is displayed by mapping or zones (e.g. strategic framework map). The CairnsPlan 2016 v1.1 Strategic Framework Map includes the Port of Cairns in an Urban Area. Accordingly, strategic port land is considered to be within an urban area. • The Far North Queensland Regional Plan also includes the Port of Cairns within the urban footprint.
Chapter B9 – Socio Economic	**(S-B9.2.7.a, Table B9-24, pgB9-57 to B9-59)** It is stated within other parts of the EIS that the proposed works may impact on community access to fisheries resources and fish habitats including recreational and indigenous fishing access. This has not been address in this section. **Suggested Solution** Amend the section 'Initial Assessment of Social impacts' to include potential impacts on the communities' fishing access.		X						Impact on community access to recreational and indigenous fishing is expected to be negligible given navigation in Trinity Inlet, Richters, Thomatis Creeks will be minor and temporary. Dredging activites will generally occur in deeper less fished areas, with the exception of the western edge of the outer channel. Ports North will provide the community and fishing industry suitable advanced notification of dredging locations and timing. It is therefore considered that a Fisheries Adjustment will not be applicable.
Chapter B9 – Socio Economic	**(S-B9.3.8, pgB9-117)** It is stated within other parts of the EIS that the proposed works may impact on commercial access and linkages between a commercial fishery and infrastructure, services and facilities. This has not been addressed in this section. **Suggested Solution** Amend the 'Economic Impacts' section to include potential impacts on commercial fisheries. A fisheries adjustment may be necessary as per DAF's Guideline on Fisheries Adjustment as a Result of Development.		X						Impact on access to commercial fishing is expected to be negligible given navigation in Trinity Inlet, Richters, Thomatis Creeks will be minor and temporary. Project temporary works(pipeline, mooring point) are within the recently declared net free area and also outside permitted zone for trawl. Ports North will provide the community and fishing industry suitable advanced notification of dredging locations and timing. It is therefore considered that a Fisheries Adjustment will not be applicable

2.9 Department of Environment and Heritage Protection

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
ASS management: **(Issue 9.1)** APPENDIX J: Assessment of Materials Proposed for Dredging Report (2016). APPENDIX K: Soil Values and Constraints Assessment, Northern Sands Report (2016) Baseline Soils Report – Northern Sands. Chapter C2: Dredge Management Plan Baseline Assessment Dredge Materials (Golder Associates, 28 October 2016)	**General comment:** EHP considers management approaches currently outlined for the project in the EIS for potential acid sulfate soil (PASS) to be very high risk. The EIS fails to outline appropriate management measures and risk avoidance measures to adequately address environmental risks associated with Acid Sulfate Soil Disturbance. **Suggested Solutions** Proponent provide an updated ASS Management Plan which includes the following: • Testing and treatment of any disturbed ASS in construction, operation and removal of infrastructure e.g. pipeline • Testing and treatment of any ASS material in the bottom of the tailwater settling areas and included in closure report and handover testing. • all matters outlined in comments 9.2–9.6 including: - insitu oxidation - net acid producing PASS material - PASS material with self-neutralising capacity - closure reports and hand-over testing - Tingira Steet DMPA.		X			X	X		Ports North has prepared an Acid Sulfate Soil Management Plan in accordance with Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines which regulates the dredging , transport and delivery of dredge material and tailwater management associated with the placement of Soft Clays at the Northern Sands DMPA and the Stiff Clays at the Tingira St DMPA. The ASSMP wil be provided in the Supplementary Report Ports North is currently negotiating with the Northern Sands land owner for access to the deeper parts of the existing void which may provide the opportunity for placement of additional volumes of dredge material below permanent groundwater. Ports North is conducting further Placement simulations of an alternate DMPA arrangement in the Northern Sands site. The results of these simulations will be provided in a Supplementary Report.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
ASS management: **(Issue 9.2)**	**Insitu oxidation:** The EIS did not adequately address issues associated with the oxidation and treatment of PASS material during dredging and transport. **Suggested Solution** Proponent address the following in an updated ASS Management Plan and update other relevant sections of the EIS: • Testing and treatment of any ASS material oxidised during the dredging and transport activities prior to discharge into the Northern Sands ponds. • Consideration for employing automated in-line systems to manage pH levels both at the outfall and in the lake as discussed in Section 9.4.6 of the ASS Soil Management Guidelines. • Measures to maintain neutral pH in the lake water and consideration of relevant automated real time pH monitoring and alarm system.					X	X		When PASS is saturated, the available supply of oxygen is significantly lower (typically 9 ppm). In still water, the oxygen is delivered to the soil surface via diffusion at a very slow rate and the risk of acid generation is low. In dynamic, open water bodies (such as Trinity Bay), the oxygen is principally delivered via advection to suspended soil particles and oxygen delivery via diffusion to bottom sediments is negligible. The risk of acid generation is variable and dependent upon the rate and duration of suspension but is typically low. Seawater contains the major buffering constituents - bicarbonate and carbonate in solution. When acid is generated the neutralising reaction occurs instantaneously. In an open marine environment, the available buffering capacity is immense and surrounds the suspended soil particles. Therefore, any acid generated is immediately neutralised and does not pose a risk to the surrounding environment. In open marine environments (dredge areas), the alkaline and relatively stable pH of seawater results in a slow rate of pyrite oxidation and the greatest risk of acid generation is associated with suspended or resuspended sediments. At the proposed placement area, the majority of the dredged spoil will settle to the floor of the reclamation area and return to an anoxic, reducing state. The risk of pyrite oxidation during dredging and transportation to the reclamation area is very low but will be mitigated by maintaining the spoil in a saturated state and limiting the time period between dredging and placement at the reclamation area. As further evidence of the above processes and their potential impact on the environment, the floor of Trinity Bay is covered with Holocene PASS soils, this will be similar to those to be dredged by the CSDP. Trinity Bay is naturally turbid with wind driven re-suspension of fine seabed sediment over a significant broad scale area. There is no evidence from historical water quality measurements that indicate acidification has resulted from these natural re-suspension processes. Ports North has prepared an Acid Sulfate Soil Management Plan that addresses issues associate with the testing,monitoring and treatment in accordance with Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines The ASSMP will be provided in the Supplementary Report.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
ASS management: **(Issue 9.3)**	**Net acid producing PASS material**: The proposal in the EIS to bury all the net acid producing PASS material below -1m below the permanent water table is consistent with the ASS Soil Management Guidelines. However, the management approach in the EIS heavily relies on accurately separating all acid producing PASS from net self-neutralising PASS. The identification of such material is based on a limited number of laboratory analysed samples from bore holes (point samples) to represent a substantial area/volume of soil. Thus in practice, accurately separating (during dredging) all the acid producing material from the self-neutralising material will be difficult and the volumes of acid producing PASS material may significantly differ from that modelled in the EIS. Hence some acid producing PASS material may not finish up being placed -1m below permanent groundwater as planned. **Suggested Solution** Proponent address the following in an updated ASS Management Plan and update other relevant sections of the EIS: • Confirm the height of the permanent groundwater to be used in the ASS Management Plan. Based on data in the EIS it appears to be -1m AHD which means that all dredge materials that finishes above -2 m AHD are considered at risk of potential oxidation. • All material above -1m below the permanent groundwater, must be fully laboratory tested, and assessed using acid base accounting (ABA). Material shown to be acid producing must be treated taking into account the neutralising value, fineness factor of 3 (Golder Associates) and the safety factor.		X			X	X		A report by Golder (2016) contains detailed information on the additional ASS and geotechnical investigations and their interpretation. A copy of this report will be provided in the Supplementary Report. A 3D model of ground conditions was developed for the RDEIS. The ground model was based on two main soil units, namely “soft clays” which testing indicted were Potential Acid Sulfate Soils (PASS) and “stiff clays” which were shown to be non-PASS (see below). Geophysics work carried out as part of the 2016 investigations was primarily aimed at differentiating the extent of, and the boundary between, the two main soil units. Information used to prepare the ground model included the results of investigations (both current and historical) at 126 locations (including 81 ASS investigation locations) supplemented by the 59 km of geophysics surveys. As outlined in Golder 2017 the ground model was revised based on additional information on bathymetry and channel design. Based on the revised model, plans showing where dredging is proposed and the materials expected to be encountered in the proposed capital dredging are shown on Figures F001 to F002, and cross sections of the channel showing the design dredging profiles and the materials expected to be encountered in the dredging are shown on Figures F003 to F012. Section 3.0 of Golder 2016 provided the rationale for the ASS investigations and it was noted that the main channel widening covers areas of about 4 Ha and that 8 borehole across these areas provides compliance with QASSIT guidelines. Grab sampling was also undertaken at 20 locations to ~0.8m depth, mainly in areas proposed for channel deepening. The results of ASS testing on 163 samples from 81 test locations (both current and historical) are presented in a table in Appendix C of Golder 2016. The “soft clays” tested were confirmed as being PASS and the “stiff clays” tested were confirmed as being non-PASS. Of the 154 samples of PASS tested 121 samples did not require additional lime to neutralise potential acidity (i.e. the samples were self-neutralising as a result of their shell content).

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	A “fineness factor” of 3 was adopted in calculations to account for possible over estimating the neutralising capacity (i.e shell fragments in laboratory samples are ground down and insitu shell fragments are not). The test locations where the soft clays are not self-neutralising are shown on Figures F007 to F008 in Golder (2016). The volumes of non self-neutralising PASS, self-neutralising PASS and stiff clays were calculated by chainage from the ground model and are presented in Sections 3.0, 4.0 and 5.0 of Golder (2017, RD EIS Appendix J). It is noted that the volumes of material determined as non self-neutralising PASS, and allocated for placement below permanent ground water level , were conservatively taken as the volume of the full width and full depth of dredging over practical lengths of channel segments (eg 500 lineal metre segments) and hence have a large envelope around the locations of actual detections of elevated PASS material. The segments also include self –neutralising PASS material which will be mixed in with the non self-neutralising material in the dredging and delivery process. Revised EIS Appendix AK (Golder 2017) Section 3.2 identified the seasonal groundwater base at RL 0.0m AHD. Consistent with the proposed ASSMP, and to be informed by the detailed design phase, a range of dredging sequences can be applied to achieve the optimum management of the various types of materials. AAs described in the RDEIS , the proposed approach is as follows • All of the proposed areas to be dredged where dredge material has been classified as PASS will be selectively dredged as part of the initial dredging campaign. All of the identified PASS will be placed under permanent ground water level water to remove the opportunity for oxidation. Consequently no separate ASS treatment areas are proposed for this material. • Material identified as Self Neutralising PASS will then be dredged and will be placed underwater in the DMPA to remove the opportunity for oxidation. • Some of this Self Neutralised PASS material mayl be placed above permanent Groundwater level. If so this material will be sampled and tested in accordance with QASSIT Guidelines and appropriate treatment applied to reduce/remove acid generating potential will be applied when testing indicates this is required. Ports North has prepared an Acid Sulfate Soil Management Plan in accordance with Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines. The ASSMP will be provided in the Supplementary Report.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
ASS management: (Issue 9.4)	• PASS material with self-neutralising capacity: • Currently the EIS does not propose any management measures for any material planned to be placed above -1m below the permanent water table. This is an issue for a number of reasons: • 1. Dredge precision: Trying to separate dredge self-neutralising material from the acidifying PASS material is likely to be imprecise based on point sampling. Efforts may be hampered by dredge operational efficiencies, wind and tide conditions at the dredging end, difficulties moving the outlet and slow settlement of the dredge slurry within the lake at the disposal end. Thus this component of dredging may end up with a proportion of acidifying PASS material. • 2. Laboratory classification and effectiveness of neutralising material: The sampling and laboratory analysis shows that many samples have self-neutralising material and/ or shells present. However, the effective neutralising ability in practice will be variable. The presence of coarse shell materials with low surface areas may be overstating the ability of these materials to neutralise potential acidity. • Further, as the shells are pulverised prior to laboratory analysis, acid neutralising capacity is usually overestimated. It is noted that Golders are aware of this and are following the recommendation in both the ASS Laboratory Methods Guidelines and ASS Soils Management Guidelines to use a higher fineness factor (3) in their acid base calculations which helps to give a more realistic estimate of how the material is likely to behave. • As stated in guidelines, acid base accounting is difficult for samples with shells present and some of the material judged by laboratory analysis to be self-neutralising may still produce acid in the environment (due to limited surface areas, reactivity and insoluble coatings on the shell material limiting the neutralising capacity). Hence some material expected to be net neutralising and placed above the water table may be acid producing.					X	X		Dredge precision issues have been designed out by the application of a conservative approach with the selection of full depth , full width and 500m segment increments identified around non self- neutralisng PASS material detections. A fineness factor of 3 has been conservatively applied on the self-neutralising material Beaching is not expected to occur due to the depth of the pond during this placement, due to the low proportion of coarse material and the high volumes of pump water required to prime, deliver the material and flush the full length of the delivery pipe line. The ASS Management Plan and Dredge Management Plan will address measures to avoid beaching and monitor settling rates including management actions such as active management of the position of the inlet pipelineoutlet which will prevent beaching occurring. Ports North commits to sampling and testing all material placed above -1m below permanent ground water and management of thus material as per proposed ASSMP. This commitment will be included in the schedule of commitments included in the Supplementary Report

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• 3. “Beaching”: In the process of discharging from the discharge pipe “beaching” will occur i.e. the coarser materials such as gravel, sand and shell will settle quickly near the outfall pipe whereas fines containing sulphides will distribute and settle much further from the outlet. • As a consequence the acid neutralising components may concentrate in one area and the acid producing components in the fines deposit in another area, creating ‘hotspots’ of acid producing PASS and a potential environmental risk. The only way to identify such hot spot occurrences is with planned sampling and laboratory analyses as required in the ASS Soil Management Guidelines for PASS material located above -1m below the permanent water table. • Currently the EIS does not propose sampling to identify potential ‘hotspots’ and any follow up treatment. Treatment (thoroughly mixing agricultural lime with the net acidifying PASS) of fines in drying dredge ponds is difficult. Mixing lime with hotspots at depth can be an even greater challenge. • 4. Settling rates and dredging schedule: In practice settling of fine clays may take much longer than that modelled, particularly given the settling times modelled in the EIS are based on very limited amalgamated samples. • If slower settling times occur for the acid producing PASS, the dredging may need to be halted until substantial settling has occurred - altering the timetable. If the net neutralising material is placed over the acid producing material before complete settling has occurred then there is a risk of the heavier particles in the latter material displacing some of the PASS fines above the watertable. • Given the above issues, all material placed above -1m below the permanent groundwater will need to be sampled, laboratory tested and verified that it is not acid producing (using Acid Base Accounting in Section 3 of the ASS Laboratory Guidelines).								

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The sampling rates and pass / fail criteria are detailed in Chapter 13 ASS Soil Management Guidelines.								
ASS management:	Closure reports and hand-over testing: Due to the high risk nature of the project, because the disturbance falls into the extra high treatment category and is a reclamation project involving draining, dredging or filling, closure reports and hand-over testing in accordance with Chapter 13 of the ASS Soil Management Guidelines (will need to be completed). The ASS Soil Management Guidelines state the 'hand-over testing will be carried out in accordance with this (section 13) of the Guidelines. It will need to be undertaken by an accredited independent third party not previously responsible for ASS management implemented on the site. This party may be engage by the developer after discussions and approval with the assessment manager, but under no circumstances is the developer to appoint the third party unilaterally. The choice of an approved analytic laboratory should also be discussed at that stage.' (page 95). **Suggested Solution** Proponent should commit to closure reporting and handover testing as per Chapter 13 of the Management guideline in an updated ASS Management Plan and any other relevant sections of the EIS.		X			X	X		Ports North commits to the inclusion of closure reporting and hand over testing in a detailed Acid Sulfate Soil Management Plan in accordance with Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines The ASSMP will be provided in the Supplementary Report. It is noted that the proposed placement of the dredged material into an existing sand quarry pit and licensed waste dumping facility does not involve any land reclamation . The commitment for closure reporting and hand over testing wil be included in the Schedule of commitments included in the Supplementary Report
ASS management:	**Tingira Steet DMPA**: There has been very limited laboratory testing of the stiff clays. Testing to date is insufficient to declare they don't contain PASS and are non-acid producing. Recent PASS sediments above the stiff clays may also get included with the stiff clays onto the dredge barge. It is recommended that appropriate management methods are employed (e.g. guard layer and site bunding) as a precaution prior to disposing of material at the Tingira Street DMPA.		X			X	X		Only non-PASS Pleistocene stiff clay will be placed at the Tingira Street DMPA; detailed sediment testing and mapping and dredge navigation and operator experience will enable exclusion of soft clay materials. In addition placed materials will be regularly inspected and tested in accordance with a detailed Acis Sulfate Management Plan to be refined during pre-construction planning and operationalised through the dredging contractor (within Contractors EMP) and monitoring plans. PASS management strategies forboth the Northern Sands and Tingira Street DMPAs will be included in ASSMP as part of the Supplementary Report and then refined and agreed with the Department of Environment and Heritage Protection (DEHP) as part of the ERA 16 Environmental Authority approval following the detailed planning, design and dredging contractor procurement ..

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Section 9.4.4 of the ASS Soil Management Guidelines provide further information on appropriate guard layer liming rates. A regular ASS testing program of the deposited material will need to be conducted and if positive for ASS, treatment according to the ASS Soil Management Guidelines must be implemented. This will be necessary for closure reporting and handover testing as per Chapter 13 of the Management guideline and must form part of the EIS. **Suggested Solution** Proponent commit to the following in an updated ASS Management Plan and update other relevant sections of the EIS: • Employ appropriate management methods (e.g. guard layer and site bunding) as a precaution prior to disposing of material at the Tingira Street DMPA. • Sampling and laboratory analyses to prove presence or absence of acid producing material. • Regular ASS testing program of the deposited material and treatment according to the ASS Soil Management Guidelines to be implemented if positive for ASS.								If survey confirmed the placement of Holocene sediments at the Tingira Street DMPA such materials will be characterised at a sampling frequency of not greater than 1 per 1000m3 to confirm the potential PASS risk. Dependent upon the level of indicated risk, management measures will be implemented which may range from groundwater monitoring to lime treatment of these materials. Ports North has prepared an Acid Sulfate Soil Management Plan in accordance with Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines. The ASSMP will be provided in the Supplementary Report.
Project approvals: Chapter A3-project description; Chapter A4-legislation and approvals; and other relevant technical chapters and appendices.	The environmental authority held by Northern Sands for the DMPA site does not allow the disposal of dredge spoil as proposed in the EIS. The proponent has indicated their preference for Northern Sands to relinquish part of their existing EA to allow the relinquished areas on the Northern Sands site to form part of a Port's North application for a site-specific Environmental Authority for dredging. Further information on this proposal is required for EHP to recommend conditions. • The proposed DMPA and pipeline footprints and plans including relevant sediment and acid sulfate soil (ASS) treatment areas, polishing ponds and bunded areas.	X		X		X	X		Ports North is seeking stated conditions relating to a future application for an EA for an ERA 16 (Dredging) It is expected that the stated conditions will cover the following: • Describes by broad description and reference to plans the channel dredging the general location of the pump out facility, delivery pipeline corridor , the NS DMPA site as well as the tailwater discharge pipeline corridor and discharge point. Sets environmental discharge limits for the dredging and tailwater and groundwater quality limits, air and noise limits, etc or defnes a process to develop such limits (e.g. through an Expert Advisory Panel). • Describes monitoring requirement recognizing that monitoring program design will be developed in association with the detailed design. • Prescribes TOR , membership etc. of Expert Advisory Committee

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• Proposed rehabilitation post spoil placement, tailwater discharge and pipeline removal including any ASS verification and hand-over testing in accordance with the QLD Acid Sulfate Soil Management Guidelines and the relevant ASS Management Plan. • Long term monitoring and maintenance requirements for spoil disposal activities and final land use criteria. • Additionally, the proponent should note that the Tingira Street spoil disposal site is partially below MHWS so the works may trigger operational works (tidal works) development approvals requirements under the Planning Act 2017. **Suggested Solution** Insufficient information is provided in the draft EIS for the assessment of key approvals. The following information is required: • Information on the pipeline foreshore crossing and site management of where the pipeline is on tidal lands, in relation to interruption of sediment transport, public access and considerations of any relevant matters of state environmental significance (MSES). • Demonstrate sufficient space is available, particularly for the Northern Sands DMPA to achieve necessary management measures including and not limited to: - pipelines and any associated mixing for in line treatment - settlement ponds to remove suspended sediments and iron flock - additional areas to manage any fine ASS material settled in the ponds. • Footprint and georeferenced plans covering all areas to be included in the Northern Sands DMPA including sediment and ASS treatment areas, embankment areas and riparian areas (if at risk of being be impacted by the project e.g. through salinisation and/or acidification of groundwater).								• Sets requirements for Acid Sulphate Management Plan including verification/validation testing of Self Neutralising PASS and proposals for treatment if required • Refers to Proponents Commitments Ports North is not seeking a full suite of conditions relating to the detailed design and form of the proposed delivery pipelines and DMPAs. This detail will be able to be provided following detailed design and contractor procurement. Provision of this detail at this stage is considered premature and inappropriate. Ports North is currently negotiating with the land owner for access to the deeper parts of the existing void t which may provide the opportunity for increased volume below permanent ground water , increased retention time and water quality management volumes and well as lower flood immunity bunds. Ports North is conducting further Placement simulations, flood immunity modelling and groundwater modelling of the alternate DMPA solution. The results of these simulations/modelling will be provided in the Supplementary Report. Full details of pipeline foreshore crossing and pipeline footprints and DMPA plans will be provided as part of operational works applications prior to project commencement. The existing site area to be utilized by Ports North will be handed back to the operator of Northern Sands upon consolidation of the material to an acceptable level. There will be remaining capacity in the pit for the Northern Sands operator to continue operations in accordance with current EA's.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• Detailed design plans for all proposed structures, dredge areas, tidal works and final reclamation area in georeferenced plan and cross-sectional views. • Identify all relevant levels of structures, dredged areas, earthworks and tidal phases (Lowest Astronomical Tide, Highest Astronomical Tide, Mean High Water Springs) in Australian Height Datum. • Proposed rehabilitation to be undertaken post spoil placement, tailwater discharge and pipeline removal including ASS verification and closure reports and handover testing in accordance with Chapter 13 of the QLD ASS Soil Management Guidelines and the relevant ASS Management Plan. • Long term monitoring and maintenance requirements for spoil disposal activities and final land use criteria. • Proponent to note that the Tingira Street spoil disposal site is partially below MHWS so the works may trigger operational works (tidal works) development approvals requirements under the Planning Act 2017.								
Project Approvals Executive Summary ES.A.4 Legislation and Approvals, Heading "International Convention/ Treaty Obligations"; Chapter C1-Construction	The following potential impacts have not been considered appropriately in the EIS: • any known historical spills of per- and polyfluoroalkyl substances (PFAS) based foams • accidental sediment spillages on route to the disposal location. **Suggested Solution** Proponent to provide the following information: • Identify and update relevant construction and operational management plans to address the following: - potential impacts of any known historical spills of PFAS based foams - accidental sediment spillages on route to the Northern Sands DMPA. • Include the "Stockholm Convention" in the list of International Convention/Treaty Obligations.		x						A discussion of the risk of Perfluorinated Compounds (PFCs) including Trinity Inlet spill history was provided in RDEIS Chapter B4 Section B4.2.2.j and Appendix AH Section 3.1.8. Ports North has followed and reviewed the status and outcomes of investigations into the 2013 BP Tank Farm PFAS spill and the RAN MHAS Cairns Base ground contamination investigations. Subsequently adjacent maintenance dredging areas were tested on two occasions and did not identify sediments contaminated by PFCs. The proposed capital dredging area is distant to these sources and is less likely to have been influenced by these sources. It should also be noted that capital dredging material is defined as previously undisturbed seabed and therefore unlikely to be contaminated by contemporary anthropogenic pollutant sources. The likelihood of accidental spillage of sediment containing PFAS material is therefore considered unlikely. As outlined in the Dredge Management Plan (Chapter C2), measures are included for actions to be taken to manage spillage at connection points along the pipeline route.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									Inclusion of "Stockholm Convention" in the list of International Convention/Treaty Obligations in Chapter A4, is not applicable as the actions proposed by this project are for dredging and placement of material, and as such are outside the scope of the Convention.
Flooding and Regulated structures: Chapter C2: Dredge Management Plan – p 13	The EIS did not adequately assess the EIS potential (during the filling and operation of the containment structure) for a bund wall collapse and/or for dredge material to be released into the river, onto nearby properties and/or into the Northern Sands works area. The EIS does not adequately assess the potential environmental risks of embankment failure at the Northern Sands DMPA. There is potential during the filling and operation of this containment structure for an embankment collapse and for dredge material to be released into the river, onto nearby properties and/or into the Northern Sands works area. Key issues include: • While the EIS states that the DMPA embankment will be designed and constructed by an RPEQ engineer, a Consequence Category Assessment (CCA) in accordance with EHP Manual for Assessing CCAs and Hydraulic Performances of Structures was not provided. This is required for EHP to recommend conditions to the OCG. • The EIS proposes the DMPA to operate with as little as 300 mm freeboard and proposes no spillway. EHP does not consider the current design would provide sufficient immunity for a large scale dredging and disposal operation adjacent to the Barron River to overflows in the intense rainfall events which may occur in Cairns. If the structure were to be overtopped for any reason there is a high risk of embankment failure. This could result in the discharge of up to 2,000,000 cubic metres of dredge spoil into the Barron River which drains into the Great Barrier Reef Marine Park. EHP considers the following as a minimum:			X			X		Ports North considers that the assessment of potential flooding impacts of the NS DMPA have been adequately provided in Chapter B17 and Appendices AD and N. Ports North is currently negotiating with the land owner for access to the deeper parts of the existing void which may provide the opportunity for lowering of the temporary flood immunity bunds. Ports North is conducting further Flood impact modeling on the alternate Northern Sands DMPA solution. The results of the further flood modelling will be provided in the Supplementary Report. The alternate Northern Sands DMPA footprint and bund location and details will be provided in the Supplementary Report The further flood modelling report will include a Consequence Category Assessment for the Northern Sands DMPA (Revised EIS solution with 7.5m high bunds and the alternate solution with 5.5m high bunds).. The further flood modelling report will address: • flood immunity level adopted • risk minimization measures (such as balancing pipes) • the risk of erosion of the bund batters during a major flood event • whether bunds to Probable Maximum Flood would provide any benefit or reduce risk of environmental harm. The flood modelling and CCA will be provided in the Supplementary Report Ports North is conducting further Placement simulations of the alternate Northern Sands DMPA arrangement which will include longer term consolidation simulation to inform the timing for removal of the temporary bunds. The results of these simulations will be provided in the Supplementary Report.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	o an emergency spillway which can safely discharge the overflow which would occur in the greater of the maximum 1:1000 AEP storm event at this location or the maximum pumping rate of the dredge material delivery pipeline. o structures which pose a substantial environmental risk normally have a minimum freeboard equal to the 1 in 10 year 72 hour rainfall , or the 1 in 100 year 72 hour rainfall for the relevant location. The rainfall depths for these requirements north of Cairns are 550 mm and 900 mm respectively. Therefore the DMPA at Northern Sands should be constructed to operate with a freeboard of at least 600 mm. • The embankment around the DMPA has a 1.3 km frontage onto the Barron River. The potential for serious erosion of the DMPA embankment during major flooding is not addressed. Depending on velocities in the Barron River during major flooding, protection measures may be necessary to prevent erosion of the embankment, and potential release of dredge spoil material into the river. The index flood for consideration of the type of protection necessary would be the 1:1000 year AEP (or ARI) flood in the River. This affords the same level of protection as is provided by a 1:1000 AEP designed emergency spillway. • No evidence was provided in the EIS to demonstrate that selection of the 1:100 year AEP for the embankment is sufficient to protect the environmental values downstream. Given the location of the Northern Sands DMPA immediately adjacent to the Barron River, further consideration of appropriate flood mitigation may be warranted (e.g. probable maximum flood level).								The alternate DMPA footprint and proposed pipeline locations will be provided in the Supplementary Report Ports North has prepared an Acid Sulfate Soil Management Plan in accordance with Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines that addresses ASS validation testing prior to bund removal. The ASSMP will be provided in the Supplementary Report.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• Embankments should not be removed until spoil is sufficiently consolidated and appropriate ASS validation testing is completed to prevent the risk of resuspension or erosion in the event of flooding. The design for the DMPA needs to be reviewed based on these matters and further work undertaken by the proponent to determine a new final embankment height based on the above recommendations. If the Northern Sands DMPA is assessed as a Regulated Structure in accordance with EHP Manual for Assessing CCAs and Hydraulic Performances of Structures, EHP will likely recommend the model EA conditions for Dams which are in the High or Significant Consequence Category apply. If the DMPA is not assessed as a Regulated Structure (because it has been assessed as being in the Low Consequence Category), EHP will recommend site-specific conditions for the EA that appropriately address the environmental risks and minimise impacts on sensitive receptors. **Suggested Solution** Proponent provide the following information: • Demonstrate the chosen flood protection of the embankment is sufficient to protect downstream environmental values during very large events. Justification should be provided to support the proposal that the structure does not require protection to the probable maximum flood level. • Review the design of the DMPA and update its design and footprint to address the following matters: • The findings of a formal Consequence Category Assessment (CCA) for the dredge disposal pond conducted in accordance with EHP Manual for Assessing CCAs and Hydraulic Performances of Structures.								

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• Emergency spillway and minimum freeboard which appropriately consider the adjacent environmentally sensitive areas. • The risk of erosion of the DMPA embankment during major flooding. • Consider if embankments to probable maximum flood (PMF) level is warranted given the proximity of the site to the Barron River. • Outline specific criteria and/or certification that ensure spoil is sufficiently consolidated and ASS validation testing completed prior to removal of the bunds to minimise the risk of resuspension or erosion in the event of flooding and downstream contamination.								
Heritage: Executive Summary, section ES.B.13, Residual Risk and Mitigation, p ES-34 Chapter A3, Project Description, section A3.4.2, Wharves and Berths, pA3-17 of 35 Appendix U, Heritage Impact	**State heritage place** The heritage impact statement (HIS) in the EIS did not address all proposed development works within the boundary of the State heritage place. A HIS should include discussion of proposed works as these affect the whole site, which includes wharf sheds and White's (sugar) Shed. Discussions with EHP and Justin O'Neill on behalf of Ports North in January 20171 indicated that the Port is proposing to demolish White's Shed. EHP requires further clarification on this matter in the EIS. 1 In an email dated 20 January 2017 (which followed a meeting the week prior), EHP provided information to Justin O'Neill, O'Neill Architecture, regarding Ports North proposal to demolish White's Shed. Suggested Solution Proponent provide the following information: For the HIS describe : • works proposed for all heritage structures within the heritage register boundary, including any plans for adaptation of White's Shed and other existing wharf sheds		X				X		Ports North will refer Development Applications for any works on or adjoining the State heritage place to DILGP (SARA) during the detailed design process for approval prior to commencement of landside wharf works. The proposed works subject to the EIS have no effect on the Wharf Sheds and White's Shed. The options and issues associated with the retention or future modification to Whites Shed remain unaffected by the scope of the EIS works. CHMPs will be forwarded to DATSIP for approval prior to commencement of all works.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Assessment, Section 8 Assessment of Heritage Impact, pp 35-37 Appendix U: Cultural heritage report. Cairns Shipping Development Project Cultural Heritage Assessment, prepared by Alice Buhrich; Section 9.2, Recommendations, p 38	• all proposed conservation works, other works and options for adaptive reuse • how the impact of proposed works will be minimised and mitigated including details on conservation works proposed to all heritage elements within the heritage boundary. - Include Wharf 6 in Appendix U, Section 8 Assessment of Heritage Impact, when referencing what constitutes the 'heritage place'. - As proposed demolition of Wharf 6 has more than a minimal impact on heritage significance, the proposal must be assessed against relevant performance outcomes in State Code 14: Queensland Heritage of the SDAP refer to the following link: http://www.ehp.qld.gov.au/assets/documents/land/heritage/sdap-heritage-statement.pdf								
Heritage: (Issue 2.1) Executive Summary, Legislation and Approvals, page ES-14 of 44 Chapter A4: Legislation and Approvals Appendix U: Cultural heritage report. Cairns Shipping	**Legislation and Administrative Authorities** There are a number of incorrect references to legislation and administrative authorities in the EIS. **Suggested Solution** Proponent address the following information: • Amend all references to incorrect approval processes and replace with the correct one i.e. that development applications for works on or adjoining the State heritage place are referred to State Assessment and Referral Agency (SARA) in Department of Infrastructure, Local Government and Planning (DILGP) for its referral agency response: refer Schedule 10 of the Regulation. Assess the proposed development against relevant performance outcomes in State Code 14: Queensland Heritage of the SDAP refer to the following link:					X	X		Ports North will apply for the necessary permits as part of Operational Works applications.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Development Project Cultural Heritage Assessment, prepared by Alice Buhrich	http://www.ehp.qld.gov.au/assets/documents/land/heritage/sdap-heritage-statement.pdf. • Update references to state that approval for CHMPs will be sent to DATSIP. • Provide further information regarding required approvals under the Building Act 1975 as where a building certifier is the Assessment Manager for works on a Queensland heritage place (refer to schedule 8 of the Regulation), SARA will be a concurrence agency and EHP provides technical advice to SARA. • Remove the first sentence in the first paragraph on page A4-13 of 33, (Chapter A4: Legislation and Approvals) which is the statement about the QHA and Aboriginal Cultural Heritage Act 2003 acting in tandem.								
Heritage: Appendix U, Cairns Shipping Development Project Cultural Heritage Assessment, prepared by Alice Buhrich, Section 11 Heritage Factors, p 60-1 (Table 5) B13: Cultural Heritage, Figure B13-6,	EHP supports the proposal in the EIS that suitably qualified archaeologists should monitor excavations in the vicinity of the Malay Town site, in the vicinity of the original Alligator and Lily Creek mouths. Whilst these places are not State heritage listed, the consultant identifies that the sites have value, including possible local heritage value. However, further information should be provided in the EIS to address recovery, protection and/or documentation of archaeological artefacts, features and deposits that may be exposed. **Suggested Solution** Proponent to make the following changes: • Update Appendix U to: • Include recommendations in section 11 addressing recovery, protection and/or documentation of archaeological artefacts, features and deposits that may be exposed. Refer to EHP's archaeological guidelines:http://www.ehp.qld.gov.au/assets/documents/land/heritage/archaeological-investigations-guideline.pdf					X	X		Ports North commits to engage suitably qualified archaeologist to monitor excavations in the vicinity of the Malay Town site, in the vicinity of the original Alligator and Lily Creek mouths and to address recovery, protection and/or documentation of archaeological artefacts, features and deposits that may be exposed. A commitment to prepare engage the archaeologist will be included in the Schedule of Commitments in the Supplementary Report

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
p B13-27	• Include a reference to section 89 of the QH Act and the requirement to give notice to EHP about the discovery of a thing that a person knows or ought reasonably to know is an archaeological artefact that is an important source of information about an aspect of Queensland's history. This is especially relevant should any remnants of the Malay Town Site be exposed. Notify EHP via: archaeology@ehp.qld.gov.au • Update Figure B13-6 to document all places identified in Cairns City Council's places of significance overlay and all local heritage places and all State heritage places that will be potentially affected by the proposed works.								
Heritage: Executive Summary, section ES.B.13, Residual Risk and Mitigation, page ES-34 of 44 Chapter A3: Project Description, Section A3.6, Table A3-5, Environmental Management Strategies, page A3-34 of 35 Chapter B13	**Maritime archaeology** EHP provided initial advice in July 2016, regarding assessment of maritime cultural heritage values that would (in the first instance) require examination of remote sensing data by a qualified and experienced maritime archaeologist; this has not been included in any of the cultural heritage reports. Hydrographic survey data should be reviewed by a suitably qualified maritime archaeologist to assist in determining likelihood of the presence of as-yet-unknown maritime archaeological features and to assist in establishing extent of known shipwrecks. **Suggested Solution** • Review by a suitably qualified maritime archaeologist of hydrographic survey data • Based on this, determination of the likelihood of the presence of as-yet-unknown maritime archaeological features and to assist in establishing extent of known shipwrecks. • Hydrographic survey data should be reviewed by a suitably qualified maritime archaeologist to assist in determining likelihood of the presence of as-yet-unknown maritime archaeological features and to assist in establishing extent of known shipwrecks.						X		Port North request a copy of the EHP July 2016 advice. Subject to review of this advice Ports North may commit to the following; Ports North may commit to engaging a suitably qualified maritime archaeologist to undertake a review of the hydrographic survey to determine the likelihood of the presence of as-yet-unknown maritime archaeological features and to establish extent of known shipwrecks and prepare a report on the likelihood of the presence of additional wrecks or maritime archaeological features in the development area. The maritime archaeologist may determine likely levels of both direct and indirect impact of the construction works and later operational works on the sites. If impacts are considered likely, mitigation measures will be included in the report. Subject to clarification on the relevance of its location to the project works, the Miro shipwreck (1946) may be managed as an historic wreck and options prepared in relation to the management of direct and indirect impacts on all maritime heritage elements. The extent of engagement of a maritime archaeologist will be included in the Schedule of Commitments in the Supplementary Report

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Cultural Heritage, Section B13.4.4.b Shipwrecks, page B13-26 of 38	• Include how it is proposed to minimise risk due to the project to any maritime archaeology sites. A suitably qualified maritime archaeologist be engaged in initial stages to prepare a report on the likelihood of the presence of additional wrecks or maritime archaeological features in the development area, other than those identified on the ANSDB, as well as to determine likely levels of both direct and indirect impact of the construction works and later operational works on the sites. If impacts are considered likely, mitigation measures should be included in the report. Miro shipwreck (1946) be managed as an historic wreck and options prepared in relation to the management of direct and inirect impacts on all maritime heritage elements.								
Air: Chapter B11: Air Quality and the supporting technical report at Appendix AX: CSDP Air Quality Impact Assessment	Given the "worst case" assumptions adopted for the assessment, any adverse impacts on air quality are likely to have been over-estimated. The potential for notable impacts are likely to be low. However, the possibility of transient and localised impacts, for example nuisance odour and dust, remains. The revised draft EIS recommended that NO2 and PM2.5 monitoring be initiated as soon as possible to determine existing air quality at the most impacted location—namely, at a location representative of the apartments on Wharf Street between Lake and Abbott Streets. Results from such monitoring could then be used to refine background pollutant concentrations for any future air dispersion modelling studies. **Suggested Solutions** EHP recommends: • the proponent implements NO2 and PM2.5 monitoring in the Wharf Street apartments area as proposed in the EIS. adopt measures recommended in the draft EIS to mitigate impacts on air quality				X	X			Ports North will conduct baseline air quality monitoring in the environs of the proposed Cruise Ship berthing wharves from which a detailed assessment of impact can be determined and to inform management decisions on the form of future monitoring. A commitment to conduct baseline air quality monitoring will be included within the Schedule of commitments in the Supplementary Report. Potential construction phase air quality impacts on sensitive receptors in the vicinity of Trinity Wharf and pipeline/ DMPA infrastructure will be managed through the mitigation measures identified in Chaptr C1 (Construction EMP) and the subordinate Contractors EMP. The commitment to implementing air quality mitigation measures will be included in the Schedule of Commitments in the Supplementary Report

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredging and Water Quality: (Issue 8.1) Chapter C2: Dredge Management Plan	The EIS refers to validating the dredge modelling data at the beginning of the dredge campaign. This validation must be done under different wave and tidal conditions. The results of this may necessitate longer monitoring of the dredge plume during dredging as opposed to the short term monitoring proposed. i **Suggested Solution** Proponent commit to validation of the dredge modelling under different wave and tidal conditions and amend the proposed monitoring in the EIS (and Dredge Management Plan) to facilitate this.				X				Ports North commits to validation of the dredge modelling at the beginning of the dredge campaignunder different wave and tidal conditions This will input to the proposed Reactive Monitoring Program for capital dredging to be refined in conjunction with the Expert Advisory Panel. A commitment to validate the dredge modelling data will be included in the Schedule of Commitments in the Supplementary Report
Dredging and Water Quality: (Issue 8.2) Chapter C2: Dredge Management Plan	The Dredge Management Plan does not discuss the procedure for the selective dredging of acid producing PASS. Clear guidance to the dredge operator through the Dredge Management Plan is critical for the successful management of ASS material in DMPA. **Suggested Solution** Proponent update the Dredge Management Plan to address the following: • Require that the first dredging phase must attempt to selectively dredge all acid producing potential acid sulfate soil (PASS) material for disposal at depth in the pond (before the start of dredging the self-neutralising PASS material). • Include a detailed three-dimensional bathymetry model of ASS (based on the sampling and laboratory analyses already conducted) which shows the predicted three dimensional distribution of: i) acid producing PASS material; ii) self-neutralising PASS material and; iii) the stiff clays. This must have detailed coordinates and depths so that the dredge operator can plan and as precisely as possible extract the acid producing material first for disposal in the pond.		X				X		Ports North will provide the channel ground model to the appointed dredging contractor. The contractor in conjunction with Ports North will develop detailed PASS mapping and dredging procedures; these will be provided in an updated DMP and included within Contractor EMP and provided to DEHP prior to the commencement of dredging. The DMP will require the initial dredging phase to selectively dredge all identified PASS material for disposal at depth in the DMPA prior to commencing dredging of the self neutralising Pass Material. It is noted that selective dredging of materials during an individual dredge load cycle is not possible. The degree of selectiveness is therefore limited to 500m segments of channel length. This is a more conservative envelope approach that negates risks and hence does not require detailed 3 Dim mapping or instruction, nor the risk of lack of dredging precision.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredging and Water Quality: (Issue 8.3) Chapter C2: Dredge Management Plan	Footprint of the Northern Sands DMPA shown in Figure C2-2 of the Dredge Management Plan does not include enough space within the proposed EA boundary for management of sediment and acid sulfate soils. **Suggested Solution** Proponent address the following information: Update the Dredge Management Plan and associated management requirements to: • Demonstrate sufficient space is available, particularly for the Northern Sands DMPA to achieve proposed management measures including and not limited to: - pipelines and any associated mixing for in line treatment - settlement ponds to remove suspended sediments and iron flock - additional areas to manage any fine ASS material settled in the ponds. • Show the footprint and georeferenced plans covering all areas to be included in the Northern Sands DMPA including sediment and ASS treatment areas, embankment areas and riparian areas (if proposed to be impacted by the project e.g. through salinisation and/or acidification of groundwater).			X			X		The design of the DMPAs will be based on achieving the performance outcomes of the Stated conditions for the EA for ERA 16 dredging. The concept detail of the alternate DMPA proposals for Northern Sands (Revised EIS concept and the alternate deeper void concept) will be provided in the Supplementary Report. This will demonstrate sufficient sace is available and identify areas proposed for various construction activities.
Dredging and Water Quality: Chapter C2: Dredge Management Plan Chapter B5 Marine Water Quality	In regards to tailwater management: • Based on settlement rates of 4-5 hours and 5 dredge pumps per day, installation of the proposed 30 Ha pre-release treatment pond to manage discharge water quality is highly recommended. This pond would provide flexibility to ensure that discharge water is within performance parameters prior to release. • The rational for the selection of the proposed tailwater discharge criteria (i.e. 48-hour rolling average TSS does not exceed 100mg/L and 14 day rolling average does not exceed 50 mg/L) was not discussed in the EIS.		X	X			X		Management of discharge water quality may involve a range of techniques including short term suspension of dredging to allow increased retention times or the provision of additional retention volume within the placement pond. Tailwater discharge criteria were informed by the understanding of the EPP(Water), QLD Water Quality Guidelines and Objectives, outcomes of the EIS Baseline Monitoring between 2013-2017 of the proposed areas of the receiving environment adjacent to the DMPA sites (refer to Chapter B5 and more specifically to Appendix O), and were also chosen with reference to the Townsville Port and Sunshine Coast Airport dredging projects which reflect the most recent management apporaches. Modelling also incorporated available background water quality data Barron River (10 months project data). It is considered that Revised Draft EIS water quality impact modelling represents a conservative assessment.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• The EIS did not adequately assess potential for scouring of sediment around the tailwater release pipe nor propose adequate mitigation measures and discuss final rehabilitation at the site following pipe removal. Measures to reduce the velocity of discharge water to prevent scouring around the pipeline will be required. **Suggested Conditions** Proponent provide the following information: • Include the footprint, plans and management measures for the proposed pre-release treatment pond at the Northern Sands DMPA site to ensure it can be included on the EA for dredging. • Justify the proposed tailwater discharge limits. • Propose tailwater release limits for all physioco-chemical parameters based on sufficient background water quality monitoring. • Outline measures to reduce the velocity of discharge water to prevent scouring the receiving environment and sedimentation. • Outline rehabilitation plans around the pipeline and associated infrastructure after decommissioning.								Ports North will provide detail in relation to outfall scour protection and rehabilitation during the detailed design and contractor procurement phase by way of an updated DMP (within Contractor EMP) in support of operational works applications for tidal works. An updated 12 month baseline water quality dataset for the Barron River (inclusive of the final 3 months of data collection ending July 2017) will be provided with the Supplementary Report.
Dredging and Water Quality: Chapter C2 Dredge Management Plan Appendix AJ: Water Quality Impact Assessment	The EIS and Dredge Management Plan do not define final groundwater, surface water and tailwater compliance conditions (i.e. limits to be included on the EA) at appropriate monitoring locations and sensitive receptors associated with dredging and spoil disposal activities. For example values of turbidity (above background) identified in table 2-7 are 'not proposed at this stage as the actual trigger values during dredging'. The proponent states that the current threshold values will be supplemented immediately prior to commencement of the campaign. However this impacts on EHP's ability to recommend conditions for the OCG for the CG's evaluation report.					X	X		PN anticipates that limits for relevant groundwater and surface water parameters at appropriate monitoring locations and sensitive receptors associated with dredging and spoil disposal activities will be developed in conjunction with an Expert Advisory Panel appointed approx.. one year before the project is scheduled to commence. The Panel will play a key role in refining project design to minimize impacts and recommend monitoring strategies and techniques (including thresholds). It is envisaged that the Panel will provide input to an application for an ERA 16 and the final Dredge Management Plan provided to EHP for approval. This approach could be included in the CG's evaluation report as recently occurred for the Port of Townsville.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Additional information is required on the following matters for EHP to set conditioning of acceptable impacts on environmental values: • Proposed limits for relevant groundwater and surface water parameters at appropriate monitoring locations and sensitive receptors associated with dredging and spoil disposal activities. • Proposed limits at the tailwater discharge site and downstream monitoring sites. • locations and trigger levels for water quality and habitat monitoring. • The compliance limits should be representative of the reference condition for specific sites and take into account the condition of sensitive receptors.								
Dredging and Water Quality: Chapter C2: Dredge Management Plan – pp 40	The proposed role of the TAC is endorsed. However it should be acknowledged that its role is advisory and that EHP, as the environmental regulator, will be responsible for setting compliance conditions and, where necessary, endorsing water quality trigger values for alert levels. Additional detail should be provided on the membership, function, reporting, timing and role of the expert advisory panel in the project and in setting management trigger guidelines. **Suggested Solution** Prepare a Terms of Reference for the operation of the technical advisory committee (expert panel) which provides information on the membership, function, reporting, timing and role of the expert advisory panel in the project. The EAP should also include expertise in coastal hydrodynamics. Where dredging is proposed imminently, ideally the EAP should be convened to develop trigger values and a detailed monitoring framework for submission with the environmental authority application. Alternatively, these can be provided in a subsequent version of the DMP for endorsement/approval by EHP prior to commencement of the activity.			X		X	X		Ports North will prepare a draft Terms of Reference for the operation of an Expert Advisory Panel (EAP) providing information on its membership, function, reporting, timing and role. The Draft TOR will be included in the Supplementary Report

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredging and Water Quality: Chapter C2: Dredge Management Plan – pp 38 Figure C2-8	Monitoring bores should also be located beyond the predicted potential extent of salinity to verify the modelling at the DMPA and for compliance on the EA. **Suggested Solution** Proponent to provide the following information: • Identify the location of monitoring bores beyond the predicted potential extent of salinity including bores representing any sensitive receptors (e.g. riparian vegetation) to verify the modelling at the DMPA. • Set groundwater limits outside the predicted zone of influence for inclusion in the EA conditions based on sufficient background groundwater data.		X	X			X		A Plan showing the proposed location of Monitoring bores with be included in the Supplementary Report PN anticipates that limits for relevant groundwater and surface water parameters at appropriate monitoring locations and sensitive receptors associated with dredging and spoil disposal activities will be developed in conjunction with an Expert Advisory Panel appointed approx.. one year before the project is scheduled to commence. The Panel will play a key role in refining project design to minimize impacts and recommend monitoring strategies and techniques (including thresholds). It is envisaged that the Panel will provide input to an application for an ERA 16 and the final Dredge Management Plan provided to EHP for approval. This approach could be included in the CG's evaluation report as recently occurred for the Port of Townsville.
Dredging and Water Quality: Chapter C2: Dredge Management Plan – pp 15	The Dredge Management Plan states a Stormwater Management Plan will be developed for the Tingira Street location. Details of this plan have not been included. A relevant Stormwater Management Plan is required to ensure surface and stormwater runoff on the Tingira Street dredge spoil placement site does not impact water quality within the natural waterways adjacent to the site. **Suggested Solution** Provide a Stormwater Management Plan for the Tingira Street DMPA area to EHP.					X	X		Ports North will prepare a Stormwater Management Plan for the Tingira Street DMPA as part of Operational Works applications prior to commencement. A commitment to prepare the Stormwater Management Plan will be included in the Schedule of Commitments in the Supplementary Report
Waste and Land: Chapter B15, Waste, B15.3.3 - Existing Port of Cairns and Shipping Waste	In "Chapter B15 – Waste" the draft revised EIS states on Page B15 – 14 of 81 that sewage is not a "regulated waste". EHP advises that sewage that will be transported via tanker trucks from berthed ships to the CRC Southern WWTP is categorised as a "regulated waste" and accordingly with require licensed regulated waste transporters to convey this sewage to CRC's Southern WWTP	X							Ports North operations include requirements for shipping agents to make arrangements for the management of vessel based waste streams as required by applicable legislation, inclusive of the need to engage licensed regulated waste transporters to transport sewage from ship's holding tanks to sewage treatment plants. RD-EIS Chapter B15 and also Appendix BC outlines in detail management waste streams inclusive of regulated waste, under existing and project phases.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Management, TABLE B15-3, p B15-14	**Suggested Solution** Proponent to note and update in the EIS that sewage from ship's holding tanks that is transported by tanker trucks would be categorised as "regulated waste", and accordingly licensed regulated waste transporters would be required to transport this sewage from ship's holding tanks to sewage treatment plants.								A commitment to engage license regulated waste transporters for the management of applicable waste streams will be included in the Schedule of Commitments in the Supplementary Report
Waste and Land Chapter B1: Land Section B1.3.2.j Contaminated Land.	Properties identified on the EMR must be properly investigated to determine what, if any, contaminants might exist, prior to undertaking any development. **Suggested Solution** Proponent to note that properties identified on the EMR must be properly investigated to determine what, if any, contaminants might exist, prior to undertaking any development."		X			X			Ports North will investigate properties affected by Landside works identified on the EMR to determine if contaminants exist, prior to undertaking any development. It is noted that such land affected by the landside works is Strategic Port Land, under existing management by Ports North who have a long term understanding of prior land use activities and numerous studies into the potential contamination status. Chapter C1 Construction EMP, includes proposed appropriate environmental and human health mitigation and management measures which will be developed as part of Operational Works applications and managed during the construction phase of the project through inclusion of relevant provisions for management of contaminated land in the Construction EMP and appointed Contractors EMP. A commitment to conduct these investigations will be included in the Schedule of Commitments in the Supplementary Report
Ecology Chapter C2: Dredge Management Plan, Chapter B7 Marine Ecology, section B7.4.5 Impacts to Megafauna, p B7-122	Insufficient information was provided in the EIS to justify the distances proposed for the 'megafauna observation zone' (1 km) and 'megafauna exclusion zone' (100 m) to manage piling impacts to marine megafauna, including listed threatened species such as marine turtles and nearshore dolphins. **Suggested Solution** Proponent provide the following information: • Provide further justification for the proposed distances and methodology for the observation and exclusion zones to manage piling impacts for marine megafauna that are classified as protected wildlife under the Nature Conservation Act 1992.		X			X			Ports North commits to including appropriate management measures to address vibration and underwater noise issues associated with piling as part of the CEMP. These will be based on accepted techniques and guidelines for managing marine piling effects to megafauna. Proposed measures, inclusive of those suggested in this submission were addressed in development of the RD-EIS Chapter C2 Dredge Management Plan, and C4 Marine Operations Management Plan
Ecology Chapter B7 Marine ecology, section B7.3.3.a	Direct loss of foraging resources for nearshore dolphins: Snubfin dolphin, Orcaella heinsohni; Indo-Pacific humpback dolphin, Sousa sahulensis **Suggested Solution** Proponent provide the following information:		X		X				Ports North commits to engage with relevant researchers and government agencies with jurisdiction for threatened species management, to further define the importance of Cairns and northern beaches areas and sea floor habitats for such species, and determine the need for the conduct of a specific targeted survey for nearshore dolphin species and to undertake a Significant Residual Impact Assessment.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredging of the Channel, Inner Harbour and Swing Basins, p.B7-89	• Commit to conducting specific targeted surveys for the nearshore dolphin species to identify local population core areas of habitat use. • Undertake a significant residual impact assessment using the Significant Residual Impact Guidelines, DSDIP: December 2014 to determine whether these species will be significantly impacted as a result of the loss of the subtidal soft sediment habitat.								A commitment to engage with relevant researchers and government agencies with jurisdiction for management of dolphins to determine the need for conduct these surveys will be included in the Schedule of Commitments in the Supplementary Report
Coastal processes and dredge modelling: (Issue 6) B.3 Coastal Processes – section B3.2 – Existing environment, descriptions and modelling	Additional information is required on the following: • Validation of the dredge modelling under different wave and tidal conditions. The results of this may necessitate ongoing monitoring of the dredge plume during dredging as opposed to the short term monitoring proposed in the EIS. • The predicted impacts of climate change on coastal processes.		X		X				Ports North proposes that validation of the dredge plume modelling will be undertaken in consultation with the Expert Advisory Panelduring final stages of dredging. Chapter C2 Dredge Management Plan includes detail of the Reactive Monitoring Programs (refer to C2.8.2b) Chapter B17 Hazard and Risk and supporting Appendices, is inclusive of consideration of predicted climate change impacts on coastal process, including land use planning parameters, sea level rise and changed climate regime. Climate change impacts on coastal process have been considered in design levels for the models for NS DMPA flood levels, Coastal Process model (Chapter B3) and also prevail in Port Northe. Approved Land Use Plan. Applicable to the landside works portion of the project. No further commitments are proposed for additional modelling of coastal process.

2.10 Department of National Parks, Sport and Racing

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Chapter A4 – Legislation and Approvals	Dredging works are confined to the State Great Barrier Reef Coast Marine Park (GBRCMP). Therefore the references to the Great Barrier Reef Marine Park Authority (GBRMPA) as an approving authority for dredging/works are no longer considered relevant. Note that the following State only approvals will be required under the Marine Parks Act 2004/Marine Parks (Great Barrier Reef Coast) Zoning Plan 2004: • Approval to carry out works for dredging within the Trinity Inlet Segment of the GBRCMP to enlarge the shipping channel; • Approval to carry out works sand scraping at the mouth of Richters Creek; and • Approval to carry out works to install and decommission, and to operate, a temporary pipeline facility, the pump-out facility/dredge mooring facility and a temporary discharge pipe for waste within the Marlin Coast Segments of the GBRCMP. **Suggested Solution** • reference to GBRMPA in Table A4-2 in relation to dredging approvals should be removed. GBRMPA references in relation to works approvals should also be removed from the EIS throughout the document; and • the specific types of marine park authority required under the *Marine Parks Act 2004/Marine Parks (Great Barrier Reef Coast) Zoning Plan 2004:* should be listed, either in Table A4-2 or in a table elsewhere in the document.	**X**							Noted
Dredging	Chapter A4 (A4.4.10) of the draft revised EIS identifies that dredging to widen and lengthen the access channel outside of the existing marine park exclusion corridor within the General Use Zone of the GBRCMP should be authorised via a marine park permit.	**X**					X		Noted

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	NPSR has previously indicated that rather than approving the dredging within the marine park via a permit process it may seek to amend the marine park boundary to exclude the channel widening area from the marine park. This option was initially preferred as it would maintain co-location of the exclusion corridor within both the marine park and declared FHA. **Suggested Solution** NPSR has further considered this matter and has decided that any dredging within the General Use Zone of the marine park would be authorised through a marine park permit process, rather than via an unnecessary legislative amendment process to amend the marine park boundary. This position supports of the process detailed in the draft revised EIS.								
Chapter B2: Nature Conservation Areas	Chapter B2 of the draft revised EIS identifies that: • A 9.2 ha area of the Trinity Inlet declared Fish Habitat Area (FHA) on the western side of the navigation channel, in the vicinity of Chainage 14459, is proposed to be revoked from the declared FHA to allow for the channel to be widened in this location; and • An equivalent area of habitat on the eastern side of the channel is proposed to be added to the declared FHA as compensation, with the aim of achieving a no net loss outcome. • The Department has previously offered 'in-principle' support for this revocation/addition concept to facilitate the channel widening in this location. While the draft revised EIS provides some general information on this proposal, no detailed plans identifying the proposed revocation / addition areas have been provided nor is there a specific comparison of the habitats that are proposed to be lost/ gained. • Note that plans for the proposed revocation/addition were provided in the original draft EIS, the proposed revocation/addition has increased from 2.25ha in the original draft EIS to the 9.2ha FHA revocation stated in the revised EIS.					X	X		Ports North will provide metes and bounds plans for the FHA revocation in the Supplementary Report..

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Suggested Solution It is essential that the final revised EIS includes the following information to allow for complete assessment of the proposal and to ensure that, if the project is approved, the EIS consultation will be adequate also satisfy the consultation requirements for the declared FHA amendment process: Detailed plans showing the: - location and dimension of the areas proposed to be revoked from, and added to, the Trinity Inlet declared FHA; - The location of any existing and proposed channel markers in relation to the existing and proposed FHA channel exclusion corridor. • Confirmation of the area (hectares) of the proposed revocation and addition areas. • A comprehensive discussion of the habitat/ ecological values within both the proposed revocation and addition areas. • An assessment of the relative values of the proposed revocation and addition areas. • Details of any existing or potential management issues within the proposed FHA addition areas that may be incompatible with, or compromise the management of, these areas as an A management declared FHA (e.g. the presence of buoy moorings or other structures).								
Chapter B16 – Climate Change and Greenhouse	The revised EIS states that only a negligible increase in maintenance dredging is expected from the development (2-6%). However the revised EIS also suggests that the prevalence of cyclones and other significant natural events will increase the need for maintenance dredging due to the increase in sedimentation in the inner and outer channels. No figures are provided of the estimated percentage increase in maintenance dredging, due to climate change driven significant events, associated with the revised channel design and how will addition dredge spoil will be dealt with.		**X**						Existing Marine Park Permit G10/33155.1 and Sea Dumping Permit SD10/01have sufficient authorised flexibility to allow climate change driven potential increase of maintenance dredging requirements.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The concern is that significant events may lead to an increase in maintenance dredging required, and therefore increases in offshore disposal of maintenance dredge material. It is also not clear whether this additional dredging falls within the existing allowance set by Commonwealth approvals. **Suggested Solution** NPSR recommends that, given that the EIS recognises climate change driven increases in significant events, it should also provide details on predicted increases in maintenance dredging requirements associated with the widening of the channel that may arise from an increase in the prevalence of such events and how this material will be dealt with.								

2.11 Department of Infrastructure, Local Government and Planning

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Future Approvals	In considering the proposed development application, the following Planning Regulation 2017 triggers will be relevant to the proponent. The proponent should consider these triggers and liaise with the relevant state agencies to identify likely issues, requirements and suitable conditions. **Part 3 Clearing Native Vegetation** The coastal area at Yorkeys Knob and sections along Thomatis/Richters Creek contain mapped vegetation. The construction of the delivery pipeline may involve native vegetation clearing. Under section 22A of the Vegetation Management Act 1999, the Chief Executive needs to be satisfied that the proposed clearing is for a relevant purpose to enable the application to be assessed. A project that has been declared to be a coordinated project under the State Development and Public Works Organisation Action 1971 is a relevant purpose. Relevant SDAP Provisions: State code 16: Native vegetation clearing Relevant technical agency: Department of Natural Resources and Mines	X					X		Noted - requirement identified in Chapter A4
	Part 5 Environmentally Relevant Activities The proposed development involves carrying out the following Environmentally Relevant Activities: ERA 16 – Extractive and screening activities (dredging) ERA 8 – Chemical storage (nature and scale to be determined) Relevant SDAP Provisions: State code 22: Environmentally relevant activities Relevant technical agency: Department of Environment and Heritage Protection	X					X		Noted requirement identified in Chapter A4

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Part 6 Fisheries • Fish Habitat Areas • Marine Plants • Waterway Barrier Works Marine-based works in any area containing marine plants has the potential to damage marine plants. The construction and operation of the delivery pipeline is also likely to result in the removal, destruction and damage of marine plants. The Trinity Inlet Fish Habitat Area and Yorkeys Creek Fish Habitat Area are located within the project area. The Fisheries Act 1994 does not support dredging within a FHA and there is a legislative need to amend or revoke the declared FHA. Relevant SDAP Provisions: State code 11: Removal, destruction or damage of marine plants State code 12: Development in a declared fish habitat area State code 18: Constructing or raising waterway barrier works in fish habitats Relevant technical agency: Department of Agriculture and Fisheries	X					X		Noted requirement identified in Chapter A4
	Part 7 Hazardous Chemical Facilities The relevance of Part 7 is to be determined. It should be noted that this trigger only relates to a material change of use application. Relevant SDAP Provisions: State code 21: Hazardous chemical facilities Relevant technical agency: Queensland Treasury		X				X		Noted requirement identified in Chapter A4
	Part 8 Heritage Place The Cairns Wharf Complex is listed on the Queensland Heritage Register. The proposed development involves the provision of new dolphin structures. Relevant SDAP Provisions: Sate code 14: Queensland heritage Relevant technical agency: Department of Environment and Heritage Protection	X					X		Noted requirement identified in Chapter A4

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Part 9 Infrastructure-related referrals **State transport corridors and future state transport corridors** The development involves the pipeline crossing the Captain Cook Highway which is a state-controlled road. Relevant SDAP Provisions: State code 1: Development in a state-controlled road environment State code 6: Protection of state transport networks Relevant technical agency: Department of Transport and Main Roads	X					X		Noted requirement identified in Chapter A4
	Part 13 Ports **Land within limits of another port – assessable development** **Strategic Port land** The Transport infrastructure Act, section 287A and the Land Use Plan (LUP) prepared by Ports North must be considered in the assessment of the application. Relevant SDAP Provisions: Nil Relevant technical agency: The chief executive of the port authority for the land	X					X		Noted requirement identified in Chapter A4
	Part 17 Tidal works or work in a coastal management district The project including the construction and operation of the delivery pipeline and pump out facility is located within a coastal management district. The proposed development involves various tidal works. Tidal works are defined in the Coastal Protection and Management Act 1995 (Coastal Act) as operational works in, on or above land under tidal water. Relevant SDAP Provisions: State code 8: Coastal development and tidal works State code 7: Maritime safety Relevant technical agency: Department of Transport and Main Roads (Maritime Safety Queensland) Department of Environment and Heritage Protection	X					X		Noted requirement identified in Chapter A4
	Part 19 Taking or interfering with water The proposed development will involve discharging the tailwater into the Barron River.		X				X		Tailwater discharge will be regulated under the EA for ERA 16

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Relevant SDAP Provisions: State code 10: Taking or interfering with water Relevant technical agency: Department of Natural Resources and Mines								
	Part 20 Wetland protection area The location of the proposed pipeline is impacted by the wetland protection trigger area, however the wetland is setback a significant distance from the proposed pipeline. Relevant SDAP provisions: State code 9: Great Barrier Reef wetland protection area Relevant technical agency: Department of Environment and Heritage Protection	X							Noted
Other Approvals	The proponent should be advised that it will be necessary for them to confirm the necessary approvals required under the Cairns Regional Council's planning scheme, CairnsPlan 2016, and discussion with Cairns Regional Council should be undertaken. If Cairns Regional Council does not consider the pipeline and placement of the dredge material as being part of the previously issued development permit for the Northern Sands, then the proposed development would most likely be considered as an undefined use for the purpose of the Planning Scheme and be subject to the impact assessment process. There are no definitions in the CairnsPlan 2016 that cover the development of a pipeline for the proposed dredging purposes. The proponent should also be advised that the proposed development will require an environmental authority from the Department of Environment and Heritage Protection. The proponent will need to confirm if the environmental authority can be dealt with through the existing environmental authority for the Northern Sands development.								Ports North has met with CRC for Discussions on the relevant approval processes. Ports North does not consider the placement of dredge material in an existing quarry void or the temporary placement of the delivery pipeline on Rural zoned land an "undefined Use" under the planning scheme. Permanently altering the depth of an existing void represents does not represent a use of the land. It is considerd that these outcomes represent an action and the consequences are appropriately regulated through the Planning Scheme's requirement for earthworks >50m3 to be assessed as operational works. Ports North considers that the CSDP approval process should be consistent with that used by CRC for their own application for dredging, pipe line delivery and placement of material at the Northern Beaches which was recently assessed as Operational works and not a Material Change of Use which would have been required if such actions were considered an "Undefined Use" The Environmental Authority has been discussed with DEHP and Ports North advised that it is not the preference of Ports North or Northern Sands for the existing Authorities (irrelevant to the dredge material placement) to be utilized or amended for the CSD Project. It has been further recommended that the Environmental Authority for dredging (ERA16) is the most appropriate mechanism to assess and approve the dredging, delivery, placement and tail water discharge processes, the scope of which are well beyond the operations or control of Northern Sands.

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Flooding Impacts	DILGP considers that the proponent needs to address in more detail the mitigation of the flooding impacts from the construction of a bund for the Dredge Material Placement Area.			X			X		Flooding impacts of temporary bund construction have been addressed in Chapter B17 . Proposed changes to the bund configuration as a consequence of arrnagements for access to the entire void will be subject to further Flood modelling. Details of proposed changes and the assessment of flooding impacts will be provided in the Supplementary Report. Design and construction of the bunds will be assessed as part of the future operational works application.

2.12 Department of State Development

ISSUE/REIS REFERENCE	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
General Response	On behalf of Business Solutions and Partnerships (DSD), please be advised that we have nil comment in relation to the revised draft EIS for the Cairns Shipping Development Project.	X							Noted

3.0 RESPONSE TO ISSUES RAISED IN COMMUNITY SUBMISSIONS

3.1 Acid Sulfate Soils

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Acid Sulfate Soils	The revised proposal includes transferring and dumping 900,000 m3 of dredge spoil made up of 35% Potential Acid Sulfate Soils (PASS) and 65% Self Neutralizing PASS. The spoil would be pumped via a 5 km pipeline and dumped under the water table at the Northern Sands pit. No evidence or examples have been provided that show this has been done safely and effectively, on this scale, as a way of dealing with PASS anywhere else in the world. It appears to be experimentation on the doorstep of the Great Barrier Reef - where the stakes could not be higher. Concerned that the methods used to contain and manage material containing PASS has not been done elsewhere		X						Transport of dredge materials (PASS and non-PASS) to shore based placement areas is routinely undertaken throughout Queensland using the proposed pumping technology. Placement of PASS in anoxic underwater environments (strategic reburial) is recognized as a suitable management strategy in the Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines (2014).
Acid Sulfate Soils	There is potential for PASS mobilisation from construction of the pipeline through generation of mudwaves either side of pipeline being pushed above tidal levels, due to weight compressing soft sediments up around it, leading to changes in oxidation risk of the elevated sediments.		X						Risk of such impact will be managed through preconstruction geotechnical analysis and design.
Acid Sulfate Soils	The Tingira St DMPA is to receive the backhoe dredged inner harbour sediments which comprise stiff clays in addition to some surface soft materials and potential ASS. The DMP does not explain how PASS materials will be separated from the stiff clays to avoid placement of PASS in locations where oxidation is probable, leading to legacy acid and metals mobilisation issues. The site has no proposed mitigations for management of any tailwater created from dredged materials. The porosity of the existing reclamation bund walls is not assessed.						X		Only non-PASS stiff clay will be placed at the Tingira Street DMPA; detailed sediment testing and mapping and dredge navigation and operator experience will enable exclusion of soft clay materials. In addition placed materials will be regularly inspected and tested (if necessary) in accordance with a detailed ASSMP to be developed during pre-construction planning by Ports North and actions included in the requirements of the dredging contractor (within Contractors EMP). If survey confirmed the placement of Holocene sediments at the Tingira Street DMPA such materials will be characterised at a sampling frequency of not greater than 1 per 1000m3 to confirm the potential PASS risk. 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. PASS management strategies will be documented in the ASSMP and agreed with the Department of Environment and Heritage Protection (DEHP) as part of the Environmental Authority for ERA 16 (Dredging)approval.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Acid Sulfate Soils	Elsewhere in the revised EIS the consultants note that it is unlikely the TSHD can be used within the inner harbour area, hence this type of dredge cannot be used to remove the soft sediments and potential PASS which sits above the stiff clays. Presently all backhoe dredging is proposed for the inner harbour part of the Cairns Shipping Project. None of the inner harbour sediment is presently slated to be deposited in Northern Sands DMPA where ASS is proposed to be managed.		X						As stated in Chapter A3, Section A3.2.2cTThe outer channel and parts of the inner port will be dredged using a Trailer Suction Hopper Dredge Vessel (TSHD). For the CSD Project the size range of applicable TSHDs is determined by the existing seabed depths and turning room in the channel as well as required pumping power for the delivery to soft clay DMPA. A relatively shallow draft TSHD is required, with the ability to hold reasonably large amounts of dredged material in the hopper A medium-size TSHD of hopper capacity of about 5600 m3 with suction pipe of 1.0 m diameter is anticipated for the soft clay dredging task. Chapter A3, Section A3.2.2d notes that the firm to stiff clays in the inner port will be dredged using a Back Hoe Dredger (BHD). The BHD will also dredge the stiff clays from the inner channel with placement at Tingira Street.
Acid Sulfate Soils	Placement of DGT samplers within the Barron River and Richters creek should be undertaken to measure baseline metals/metalloid concentrations. DGT samplers are used in the PCIMP program in Gladstone to monitor bioavailable metals. The same sites should be used for DGT samplers during the project.						X		Surface and groundwater impact assessment monitoring strategies will be agreed with DEHP, and conditioned within the EA (ERA 16 Dredging) approval.
Acid Sulfate Soils	Groundwater monitoring of metals (page C2-37 of 66) is only initiated 24 months after placement of dredged material when pH goes under 6.0. It should be noted that significant mobilisation of metal contaminants can occur at higher pH's. This threshold appears to low, to prevent potentially significant metal contamination of groundwater. The prospect of the movement of these metals in groundwater into the immediately adjacent river (within 100m) appears not to be the subject of any monitoring. Given that salinity impacts in groundwater are expected to move 80-120m, there appear to be risks for mobilisation of metals from within the DMPA and subsequent movement into the river.						X		Lake Narelle ambient pH is approximately neutral and it is expected to increase up to that of seawater (ie 7.5-7.8). Background groundwater pH range is 6.5- 7.9 therefore a metal monitoring commencement threshold of 6 was chosen as it could indicate PASS oxidation has occurred. Chapter B6 TABLE B6-23 PROPOSED GROUNDWATER MONITORING footnote also states that The need for on-going metal analysis will be assessed based on background concentrations and exceedances observed during filling. Notwithstanding surface and groundwater impact assessment monitoring strategies will be agreed with DEHP and conditioned within the EA (ERA 16 Dredging) approval.
Acid Sulfate Soils	The tailwater validation plan does not include assessment of whether the predictions of negligible mobilisation of contaminants are correct. Given the consequences of tailwater are to a large extent governed by the mobility, level and type of contaminants this should be explicitly included in the validation modelling						X		Surface and groundwater impact assessment monitoring strategies will be agreed with DEHP and conditioned within the EA (ERA 16 Dredging) approval.
Acid Sulfate Soils	The potential for marine sediments to oxidise after placement in the DMPA does not feature in the listed potential impacts section C2.8.2 Marine Sediment Quality. Hence corrective actions are not noted.		X						Given that all PASS is expected to consolidate to below at least 1 metre below the lowest dry season groundwater level, oxidation of PASS and hence metal mobilisation is considered to be highly unlikely and therefore additional monitoring and management is not required.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									Self-neutralising PASS material that is expected to consolidate and be above -1m below the lowest dry season groundwater level will be tested and treated consistent with the ASSMP and meet QASSIT Guidelines.
Acid Sulfate Soils	PASS management measures for dredge spoil insufficient to control oxidation The management of PASS does not appear to meet best practice. For example the Executive summary states: "After the placement of stiff clay from the dredging process (which will raise the level of the land by some 1 to 2m), the land is proposed to be further capped with gravel material and used for industrial purposes in accordance with current planning." Whilst the stiff clay has been determined to be free from PASS, it is unclear how the dredge operator will be able to separate the ~320,000m3 of likely PASS sediments from those stiff clays, such that ASS is not incorporated into the above water land development. The proposed gravel capping will not prevent ongoing oxidation and creation of acid leachate should the stiff clays be mixed with PASS. Capping is recommended with a material which does not allow oxygen penetration to promote ongoing oxidation as per the reference below. "This may include covering (capping) exposed material with low permeability soil (such as clay) to reduce oxygen availability and to prevent infiltration of water, reducing the potential for leaching." Mitigation B4.4.1 is inadequate to ensure PASS oxidation does not take place.		X						Only non-PASS stiff clay will be placed at the Tingira Street DMPA; detailed sediment testing and mapping and dredge navigation and operator experience will enable exclusion of soft clay materials. In addition placed materials will be regularly inspected and tested (if necessary) in accordance with a detailed PASS management plan to be developed during pre-construction planning by the dredging contractor (within Contractors EMP). If survey confirmed the placement of Holocene sediments at the Tingira Street DMPA such materials will be characterised at a sampling frequency of not greater than 1 per 1000m3 to confirm the potential PASS risk. 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. PASS management strategies will be outlined in the ASSMP and agreed with the Department of Environment and Heritage Protection (DEHP) as part of the ERA 16 Environmental Authority approval.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Acid Sulfate Soils	PASS assessment in sediment quality report The sampling frequency prescribed in NAGD does not strictly meet requirements of the Acid Sulfate Soils guidelines or the State Planning Policy 2/02. Results are not representative of the full depth/volume of the proposed dredging given that core refusal was encountered at relatively shallow sediment depths. Giving the already very high liming rates discussed as being required up to 270kg of lime per m3, and the high speed of dredging proposed, there is a substantial risk that reactive PASS sediments could not be adequately treated in the DMPA and lead to acid conditions in the DMPA leading to metals mobilisation and release in tailing water. There appear to be insufficient contingencies to deal with the logistical challenge of delivering sufficient lime to match the pace of dredging. BMT-WBM acknowledge this logistical challenge stating: Addition of lime slurry into pumped dredged material is not considered feasible at these liming rates and physical blending of lime into the material post placement would be required." However, this suggests that PASS could be oxidised in the DMPA for prolonged periods prior to application of lime to control pH. The revised EIS does not make it clear how this high risk will be adequately managed. There is a significant risk of generation of high levels of BOD and COD in the tailwater. The method of remediation/mitigation/management prior to release is unclear.		X						A report by Golder (2016) which does not appear to have been included in the EIS appendices contains detailed information on the additional ASS and geotechnical investigations and their interpretation. A copy of this report is attached. As outlined in Golder 2016 a 3D model of ground conditions was developed. The ground model was based on two main soil units, namely "soft clays" which are known to be Potential Acid Sulfate Soils (PASS) and "stiff clays" which are known to be non-PASS. Geophysics work carried out as part of the 2016 investigations was primarily aimed at differentiating the extent of, and the boundary between, the two main soil units. Information used to prepare the ground model included the results of investigations (both current and historical) at 126 locations (including 81 ASS investigation locations) supplemented by the 59 km of geophysics surveys. As outlined in Golder 2017 the ground model was revised based on additional information on bathymetry and channel design. Based on the revised model, plans showing where dredging is proposed and the materials expected to be encountered in the proposed capital dredging are shown on Figures F001 to F002, and cross sections of the channel showing the design dredging profiles and the materials expected to be encountered in the dredging are shown on Figures F003 to F012. Section 3.0 of Golder 2016 provided the rationale for the ASS investigations and it was noted that the main channel widening covers areas of about 4 Ha and that 8 borehole across these areas provides compliance with QASSIT guidelines. Grab sampling was also proposed at 20 locations to ~0.8m depth, mainly in areas proposed for channel deepening. The results of ASS testing on 163 samples from 81 test locations (both current and historical) are presented in a table in Appendix C of Golder 2016. The "soft clays" tested were confirmed as being PASS and the "stiff clays" tested were confirmed as being non-PASS. Of the 154 samples of PASS tested 121 samples did not require additional lime to neutralise potential acidity (i.e. the samples were self-neutralising as a result of their shell content). A "fineness factor" of 3 was adopted in calculations to account for possible over estimating the neutralising capacity (i.e shell fragments in laboratory samples are ground down and insitu shell fragments are not). The test locations where the soft clays are not self-neutralising are shown on Figures F007 to F008 in Golder 2016. The volumes of non self-neutralising PASS, self-neutralising PASS and stiff clays were calculated by chainage from the ground model and are presented in Sections 3.0, 4.0 and 5.0 of Golder (2017).

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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									Given that all PASS is expected to consolidate to below at least 1 metre below the lowest dry season groundwater level, oxidation of PASS and hence metal mobilisation is considered to be highly unlikely and therefore additional monitoring and management is not required. Self-neutralising PASS material that is expected to consolidate and be above -1m below the lowest dry season groundwater level will be tested and treated consistent with the ASSMP and meet QASSIT Guidleines. Notwithstanding the above, PASS management strategies will be outlined in the ASSMP and agreed with the Department of Environment and Heritage Protection (DEHP) as part of the ERA 16 Environmental Authority approval. BOD and COD would only be an issue if high levels of organic material were being discharged in the tailwater. This organic material can deplete oxygen levels in the water column during decomposition by aerobic biological organisms. For this project, there is minimal amounts of organic material expected in the dredge material, and in the DMPA the fines will settle out such that tailwater discharge will only occur at relatively low levels of suspended solids (50 mg/L). Therefore, BOD/COD is considered to be a very minor low level risk in the tailwater discharge. However, a reactive monitoring program is proposed in the Barron River, with monitoring locations upstream and downstream of the tailwater discharge. The monitoring will be able to detect any changes in water quality (dissolved oxygen levels) that may by a result of tailwater discharge.
Acid Sulfate Soils	Scientifically unsupported statements around oxidation potential of PASS in seawater, lead to inadequate assessment and insufficient description of how impacts will be controlled. The revised EIS states. As there are no pathways for oxidation in seawater the risk of oxidation is negligible. Whilst there is less oxidation potential for ASS mobilised into seawater, compared to the same ASS exposed to air, it is unscientific to suggest that there are “no pathways for oxidation in seawater”.		X						When PASS is saturated, the available supply of oxygen is significantly lower (typically 9 ppm). In still water, the oxygen is delivered to the soil surface via diffusion at a very slow rate and the risk of acid generation is low. In dynamic, open water bodies (such as Trinity Bay), the oxygen is principally delivered via advection to suspended soil particles and oxygen delivery via diffusion to bottom sediments is negligible. The risk of acid generation is variable and dependent upon the rate and duration of suspension. Seawater contains the major buffering constituents - bicarbonate and carbonate in solution. When acid is generated the neutralising reaction occurs instantaneously. In an open marine environment, the available buffering capacity is immense and surrounds the suspended soil particles. Therefore, any acid generated is immediately neutralised and does not pose a risk to the surrounding environment.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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									In open marine environments (dredge areas), the alkaline and relatively stable pH of seawater results in a slow rate of pyrite oxidation and the greatest risk of acid generation is associated with suspended or resuspended sediments. At the reclamation area, the majority of the dredged spoil will settle to the floor of the reclamation area and return to an anoxic, reducing state. The risk of pyrite oxidation during dredging and transportation to the reclamation area will be mitigated by maintaining the spoil in a saturated state and limiting the time period between dredging and placement at the reclamation area. As further evidence of the above processes and their potential impact on the environment, the floor of Trinity Bay is covered with Holocene PASS soils, this will be similar to those to be dredged by the CSDP. Trinity Bay is naturally turbid with wind driven re-suspension of fine seabed sediment over a significant broad scale area. There is no evidence from historical water quality measurements that indicate acidification has resulted from these natural re-suspension processes.
Acid Sulfate Soils	Northern Sands DMPA - Lack of understanding of the risks associated with Potential Acid Sulphate Soils (PASS) and proposed treatment of these materials concerned that there has not been evidence or examples provided to demonstrate the safety and effectiveness of this methodology being used to deal with dredge spoil containing PASS soils, particularly on the scale proposed. If it is indeed a new and unproven method, conducting it on the doorstep of the Great Barrier Reef is not the place for experimentation. In particular, the PASS assessment was likely conducted in situ and may not be characteristic of the material once it is disturbed, transferred and settled in the Northern Sands DMPA. It appears that it is highly likely that the self-neutralizing components would be associated with the coarser sediments that sink and the acid-generating components associated with the finer sediments expected to settle on top of the pond. This surely would have implications on the self- neutralizing capacity of the material. It is concerning if this has not been accounted for in the EIS studies.						X		The development of NAGD screening levels includes consideration of operational influences on dredge material mobilization mechanisms. As noted in Appendix AH (BMT WBM, 2017 p32) The most recent sediment sampling and analysis results from Inner Port and Outer Channel sites (Section 3) indicate that the 95% UCL of all potential contaminants of concern (i.e. metals and organic contaminants) were below the relevant NAGD screening levels, with the exception of total mercury concentrations. However the elutriate and bioavailable concentrations of total mercury were below relevant ANZECC/ARMCANZ (2000) default marine water quality guidelines and NAGD screening levels, respectively. Therefore, it is unlikely that concentrations of contaminants of concern released during dredging pose any significant risk to the surrounding marine environment.). This assessment is in-line with results of annual maintenance dredging sediment sampling and analysis findings that the material as suitable for unconfined marine placement between 1995 and 2016 (Section 3). Material is therefore considered to be suitable for unconfined placement which is even more stringent than land based placement (National Environmental Protection Measure (NEPM)) requirements. The destinction between capital and overlying maintenance material should also be noted in respect of the lower probability of anthropogenic metals contaminats within the capital material. Given that all PASS is expected to consolidate to below at least 1 metre below the lowest dry season groundwater level, oxidation of PASS and hence metal mobilisation is considered to be highly unlikely and therefore additional monitoring and management is not required.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Furthermore, the assumption that self-neutralising acid sulphate soils presents a low environmental risk, neglects the recognised related issues of deoxygenation impacts, iron plumes, altered soil nutrient leaching and elevated mobilisation of metal contaminants, impacts that can result from acid sulphate soils irrespective of the acidity impacts. Nutrient leaching and elevated mobilisation of metal contaminants is of particular concern given that lateral migration of saline water is acknowledged as a residual risk. Northern Sands DMPA - Lateral migration of nutrients and other contaminants away from the Northern Sands DMPA								Self-neutralising PASS material that is expected to consolidate and be above -1m below the lowest dry season groundwater level will be tested and treated consistent with the ASSMP and meet QASSIT Guidleines, and oxidation of PASS and hence metal mobilisation is considered to be highly unlikely. As part of management measures, the pH and dissolved oxygen (BOD, COD, metals as required) of waters within Tingira Street and Northern Sands void and tailwaters will be monitored. Where a decline in water quality is observed, water treatment measures will be implemented such as pH adjustment, aeration, extended settling time and the like. Notwithstanding the above, PASS management strategies will be agreed with the Department of Environment and Heritage Protection (DEHP) as part of the ERA 16 Environmental Authority approval.
Acid Sulfate Soils	Also deeply concerned about the dispute between the State government and the Cairns Regional Council (CRC) in relation to project responsibility, revealed in the Cairns Post on the 24 August 2017. Even if the likelihood is deemed to be low, PASS have the potential to cause acute and chronic impacts which can be extremely costly to contain and rehabilitate. It appears that CRC are concerned that in the event of infrastructure failure there will be significant impacts on the surrounding environment. Underlying CRC's concern would be insurance implications and associated costs to rate-payers. It is disconcerting that the CRC have expressed this level of fear of the risks and lack of confidence in a significant aspect of the project, which in turn does not inspire community confidence in the project. It is absolutely essential that the assessment manager and any other contractors have the necessary technical and resource capabilities to manage the aspects of the project over which they are given control. We do not believe tax-payers should bear the risks associated with an unproven, complex engineering solution for dealing with PASS, especially given the serious concerns surrounding the economic rationale of the project. In short, the rewards do not warrant the risks. I am concerned about water quality in both the GBR and Barron River. I am concerned that the methods used to contain and manage material containing PASS has not been done elsewhere. I am concerned about losing important bird habitat at Tingira Street.						X		Given that all PASS and self-neutralising PASS is expected to consolidate to below at least 1 metre below the lowest dry season groundwater level, oxidation of PASS and hence metal mobilisation is considered to be highly unlikely. As part of management measures, the pH and dissolved oxygen (BOD, COD, metals as required) of waters within Tingira Street and Northern Sands void and tailwaters will be monitored. Where a decline in water quality is observed, water treatment measures will be implemented such as pH adjustment, aeration, extended settling time and the like. Notwithstanding the above, PASS management strategies will be agreed with the Department of Environment and Heritage Protection (DEHP) as part of the ERA 16 Environmental Authority approval. Also refer to Water Quality submission responses.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	I am concerned about impacts of dredging on inshore corals, seagrass and dugongs								

3.2 Air quality

Category	COMMUNITY COMMENT/SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Air Quality	One of the central concepts embodied in the legislation is that of an 'environmental value'. This includes a quality or physical characteristic that is conducive to public amenity and safety. The other central concept of the act applicable to the situation here is that an environmental nuisance is one that unreasonably interferes with or is likely to interfere with environmental value caused by amongst other things fumes, odour, particles or smoke.	X							Noted
Air Quality	No baseline study The draft environmental impact statement contains no explanation of why it would be that Ports North has not undertaken any baseline studies to establish precisely how cruise ship emissions impact on local residents.		X						The use of relevant and applicable air quality baseline data is an accepted methodology for such assessments. Notwithstanding Ports North have committed to conduct baseline monitoring during the detailed design phase which will inform the scope of revised air quality impact modelling or ongoing monitoring.
Air Quality	If the authors of the report were serious about attempting to predict what effect there would be on the environment adjacent to the port if there were increased ship visitations they need only test over a relevant period to see what the impact is now. Comments on Assessment The assessment of gaseous and particulate emissions that are likely to impact upon local residents and business people are based on a number of assumptions which include the following: 1. the wind speed and direction in the area of the port is comparable to that of the observations taken at the airport(S.1); 2. only one cruise ship will be docked at any one time (3.2.3), 3.stacks will have a diameter of m(7.2.4). 4. ships would have scrubbers and use 0.5% sulphur fuel the only relevant period was in 2028, 5. that the proportion of ships visiting port using scrubbers would be equal to the overall proportion of the cruise ship fleet. It follows from this analysis that while it cannot be disputed that the consultant has done its best to provide some useful modelling the difficulty is, as appears to be acknowledged by the uncertainty expressed in table 11.7, it is little more than a best guess.				X				Ports North have committed to conduct baseline air quality monitoring at sensitive receptors in the vicinity of Trinity Wharf during the detailed design phase which will inform the scope of revised air quality impact modelling or ongoing monitoring. As required by the Terms of Reference the RDEIS Air Quality Impact assessment was based on worst case scenarios, which identified minor potential impacts under low frequency meteorological conditions; for most conditions criteria exceedances are unlikely. Modelling assumptions in relation to low sulfur fuel and scrubber adoption are considered to be valid. The Air Quality modelling was based on the cruise liner numbers are from the AEC Group (2016) high projection (scenario 16), Cairns Shipping Development Project, Demand Study Update . The annual number of ship visits were randomly assigned to days in the year, so that on some days (30) there were two cruise ships with overlapping times at berth, but mostly one or none.

Category	COMMUNITY COMMENT/SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
	From the perspective of a person who will suffer directly the negative impacts of that guess being wrong this is not good enough. In reality the limited brief given to the consultant means that the EIS does not comply with the terms of reference because it does not provide any useful exposition of the adverse impacts flowing from the operation of the port if the development project were to proceed.								
	The operation by Ports North has historically resulted in ships berthed at the terminal producing emissions that make it impossible to make normal and reasonable use of apartments in our building when weather conditions direct emissions towards us. The impact of these admissions extends well beyond our buildings and up Lake Street and on some occasions many blocks away. The difficulties arise from emissions that have an unacceptable smell and cause irritation immediately to the respiratory system. In addition, the emissions contain black particulate material that is evident within an hour or two because of its lodgment upon the exterior surfaces of the building. It is impossible to make use of exterior spaces such as balconies while these ships are in port unless there are favorable weather conditions. The main thrust of this submission is that the air-quality impact assessment has totally failed to even attempt to measure or quantify the effect of the current level of visitation of cruise ships upon local residents. It has rather simply looked to see if there would be any public health issues arising from the operations. This aspect of the submission is dealt with under the next heading that deals withthe scope of the consultant's assessment. As a technical public health type assessment it is submitted below that the assessment is flawed in that it is based on a number of assumptions that are unjustified when compared to the actual operations of the port at present and comprises only a desktop study done without the benefit of any testing to establish a baseline by reference to the emissions of the vessels currently visiting. The methodology is also questioned given its reliance upon a number of possibly incorrect assumptions.				X				It is noted that administration of air quality in Queensland (via the Environmental Protection Policy -Air) is a Department of Environment and Heritage function and is complaint driven; in the event of a complaint DEHP will require a technical investigation of the incident and implementation of necessary mitigation measures to enable compliance with the EPP. Under the EP Act 'Duty of Care' provision, Ports North propose to conduct a baseline air quality assessment(including cruise shipping at berth) and rerun the Air Quality Dispersion Model, including review and revision of construction and operation phase assumptions used in the Revised EIS Air Quality Impact Assessment (Appendix AX) and testing of mitigation measures. The enforcement of 2020 IMO air quality standards will be an AMSA (Australian Martime Safety Authority) responsibility (through adoption of and implementation of the IMO commitemnts) however Ports North will also conduct periodic monitoring of air quality at sensitive receptors during the operation phase to validate the effectiveness of mitigation measures and will actively engage with cruise ship companies to ensure compliance with the IMO regulations.

Category	COMMUNITY COMMENT/SUGGESTED SOLUTIONS	ACTION						PORTS NORTH RESPONSE
Air Quality Mitigation Strategies	Mitigation strategies Unfortunately within the report it is revealed that Ports North has no intention of taking any steps itself to implement these strategies and will rather wait for ships to be compelled to implement these strategies by external regulatory action. The consultant in his report has not accurately stated the nature of regulation nationwide at this point in that reference is made to the former regulations applicable in New South Wales. According to my research the use of low sulphur fuel in Sydney Harbour is not currently regulated by state legislation but regulations issued by the Federal Government under the Navigation Act. The Federal Government was prepared to have those regulations extended to Ports in other states including Queensland. It decided only to do so if the state governments agreed to this course of action. For whatever reason, the state government declined to have these regulations apply to any port in Queensland. This also leads to my expressing concern that Ports North as an arm of the government has no desire to involve itself in regulation and would rather pass on the consequences of its complete disregard for the effects of its operations to people like myself and my neighbours. I repeat what has been said about its total indifference to our complaints. The consultant recommends that cruise ships that do not have scrubbers on engines be required to use 0.5% sulphur fuel oil, ISO or marine diesel while berthed at the wharf. This is the obvious mitigation strategy and one that can be implemented immediately without significant direct cost.		X			X			Ports North have committed to conduct baseline air quality monitoring during the detailed design phase which will inform revosed aor quality impact modelling and identification/confirmation of mitigation strategies. As noted in Chapter B11,Table B11-14, the cruise industry is rapidly transitioning to the 2020 IMO fuel regulations which will result in reduced emissions prior to the January 1 2020 introduction timeline. Ports North will also conduct periodic monitoring of air quality at sensitive receptors during the operation phase to validate the effectiveness of mitigation meaures and will actively enegage with cruise ship companies regrading emmissions and to assist in ensuring compliance with IMO regulations.
Air Quality Mitigation Strategies	It is likely that Ports North has the ability because of its control of the land comprising the port area to institute its own controls without the need for any legislation or regulation. Given its failure to do so today any further consideration of the expansion of the port should proceed on the assumptions made by the consultant, namely that mitigation strategies will not be enforced but will only apply if forced upon shipping from another level of government.		X						Ports North is in regular dialogue with cruise companies and will continue to require use of current 'best practice' operations by ships when at dock in the Cairns Port. Ports North have committed to conduct baseline air quality monitoring during the detailed design phase which will inform revosed aor quality impact modelling and identification/confirmation of mitigation strategies

Category	COMMUNITY COMMENT/SUGGESTED SOLUTIONS	ACTION						PORTS NORTH RESPONSE
Air Quality Mitigation Strategies	Those of my neighbours who have spoken to about this and that have the same concerns I do and I all are in favour of a development of the port that supports and fosters the development of the economy of Cairns. All we are looking for is a reasonable and sensible response to the adverse impacts that will flow if no steps are taken to address what we all view as being the obvious result should there be increased cruise ship visitation in the absence of the implementation of the recommended mitigation strategies.		X					Ports North is in regular dialogue with Cruise Companies and will continue to require use of current 'best practice' operations by ships when at dock in the Cairns Port. Ports North have committed to conduct baseline air quality monitoring during the detailed design phase which will inform revosed aor quality impact modelling and identification/confirmation of mitigation strategies Ports North will also conduct periodic monitoring of air quality at sensitive receptors during the operation phase to validate the effectiveness of mitigation meaures and will actively enegage with cruise ship companies regrading emmissions and to assist in ensuring compliance with IMO regulations.

3.3 Coastal and Marine Ecology

CATEGORY	COMMUNITYCOMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Coastal and Marine Ecology	Concern that I have of the ongoing impacts of increased shipping. Nowhere in this EIS does the proponent properly address the impact of increased shipping. The issue is raised in Chapter B18 using a method of assessment that is lacking in scientific rigour. The qualitative nature of impact assessment methodology is of great concern. There is not sufficient evidence that the qualitative assessment used rigorous consultation to reach informed decisions about the likelihood and consequence of each risk.		X						Consideration of the methodologies and risk matrixes used in other published EISs or by Queensland Government agencies was undertaken when determining the approach this EIS would utilise in assessing impact significance.
Coastal and Marine Ecology	Another major concern is that the Revised EIS has not made attempts to understand the impact of back to back bleaching on sensitive marine receptors and has instead relied on out-of-date assessments of reef health. Scientists have been predicting that bleaching events will start to be closer together and of greater impact. We have already seen that occur in the last two bleaching events. Sedimentation has serious implications on the occurrence of bleaching and will intensify its impacts. The risks involved with the disposal method of the capital dredge and the increase in maintenance dredging will only intensify these impacts. The revised EIS has not properly considered these in the cumulative impacts report.		X						As identified in Chapter B5 (Marine Water Quality), B7 (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching.
Coastal and Marine Ecology	The Gladstone dredging project coincided with a substantial local spike in mortalities in dolphins and dugongs. As per the turtles above, it is likely that the mobilisation of contaminants associated with the poorly managed dredging project contributed to these mortalities. The arsenic levels in Cairns sediments are comparatively higher than those in Gladstone, and the site of disposal is not sub-tidal estuary under marine water. This combination represents a substantial risk for mobilisation of contaminants from the Cairns sediments and moving them into local food webs, with consequent negative impacts on biota.		X						On the basis of extensive baseline seagrass surveys, water quality and coastal processes monitoring and computer modelling, the EIS considers that there will be minimal short and long term impact on the water quality and biota of Trinity Inlet, Barron River and near shore waters of the GBR.
Coastal and Marine Ecology	Impact on marine ecology, in particular inshore corals as well as seagrass, and by extension, Dugongs xxx wholly supports the WWF/AMCS submission in relation to the concerns surrounding impacts on marine ecology, in particular the potential risks to inshore corals as well as seagrass, and by extension, Dugongs.		X						As identified in Chapter B5(Marine Water Quality), B7 (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching.

CATEGORY	COMMUNITYCOMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Coastal and Marine Ecology	Tingira Street has been chosen as the site for the dumping of the stiff clay portion of dredge spoil for the Cairns Shipping Development Project. This is 10%, or 100,000 cubic metres, of the proposed 1m Cu M total proposed for the Trinity Inlet dredging. The remaining 90% is proposed to go to Northern Sands Barron Delta Voids north of Cairns. This submission will only deal with the 10% Tingira St component. Tingira Street site is a well-known location amongst birdwatchers both locally and internationally. An impressive 111 species of bird have been recorded there including 22 migratory and resident shorebirds. It is a reliable site to observe certain species of difficult to find birds, such as Latham's Snipe (Gallinago hardwickii), Beach Stone-curlew (Esacus magnirstrus) and rare birds like Ruff (Philomachus pugnax). Tingira St contains two distinct habitats which both need careful consideration for their conservation value, cultural and community value, and aesthetics. One habitat is the salt marsh at Number 6 in the Figure 1. Numbers 1-5 are grassland areas of value. Numbered areas 5 and 6 in yellow are the areas currently proposed for dredge spoil dumping in the Draft EIS.		X						The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by encroaching port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species. The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe, and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however encroaching port development will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies.
Coastal and Marine Ecology	Point 3. Placement of displaced waters of existing Narelle Lake, and excess wash from the dredge project The existing Narelle Lake dump contaminated water would be displaced by the dredge spoil and wash and it is proposed to be routed directly into the Barron River, the 3.5m cu mtr excess water associated with the spoil, some of it with acid sulphate issues, will also be redirected directly into the Barron River and this is an issue. The Barron River is a very short system and already has plenty of problems with water quality ie Cairns sewer outfall with strongly suspected legacy formaldehyde/glutaraldehyde (past aircraft sewer treatment) contamination, upstream primary sewers, Tinaroo dam and catchment and Barron delta agricultural contaminant runoff, 2 x commercial dumps in the delta - adjacent to the Barron and likely groundwater connected, alleged Cairns Airport Aviation fuel leak (6 years) and fire fighting foam contamination to name a few.						X		On the basis of extensive baseline seagrass surveys, water quality and coastal processes monitoring and computer modelling, the EIS considers that there will be minimal short and long term impact on the water quality and biota of Trinity Inlet, Barron River and near shore waters of the GBR. The EIS studies and modelling included assessment of the Northern Sands Site pond water quality (Chapter B6) and the palacment and discharge modelling includes all water added in the priming , pumping and washing. Acid Sulphate issues are addressed throughout the EIS. Baseline Water quality monitoring and assessment of the Barron River was undertaken (Chapter B5) and impact assessments appropriately based. General waste is not dumped at Northern Sands; it is licensed to receive inert "Construction and Demolition" waste and Potential Acid Sulfate Soils in accordance with strict conditions and restrictions on accepted waste. Lake Narelle is regularly monitored by Northern Sands against existing Environmental Authority approval conditions and will be regularly monitored during the dredge material placement period in accordance with conditions of the project Environmental Authority (ERA16), inclusive of a range of water quality parameters.

CATEGORY	COMMUNITYCOMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	Also there is evidence of a strong drop in mud and sand crab population in the last couple of years and soldier crab colonies at the mouth disappeared some years back, some have had strong concern that pollution has caused this with the dump site raising eyebrows especially since opening it up to the public general refuse. The Barron River lies in the centre of the recently declared commercial fishing gill net free zone (NFZ) and fish stocks are recovering. Considering the social and ecological sensitivity of the Barron River, it would seem inconsistent with current water quality values to further risk or introduce contamination, turbidity or salinity problems. Water in the Narelle Lake needs thorough testing before moving it anywhere and should be subject to further scrutiny regardless of whether the dredge project proceeds or not. If the project proceeds, I suggest reversing the flow of the spoil delivery pipe at times to return the wash back to its origin, ie offshore, instead of rerouting it into the Barron. I understand this is feasible.								The submission notes some issues within the lower Barron River catchment adjacent uses that are not attributable to the proposed project site. Potential sources of those issues are not likely to be influenced by the project placement or tail water discharge, and hence are not directly relevant to the project. The cumulative contribution of the noted permitted or incident discharges is a consideration for the relevant agency, and in their consideration of appropriate discharge limits for the EA-ERA16 for this project, and of main relevance being appropriate nutrient, sediment, and salinity conditions. Compliance issues for the existing other Barron delta voids and the NS site, rests with the applicable DEHP and CRC in respect of water quality matters and response to comment on those matters is respectably noted as being out of scope.. As suggested in this submission water in the Narelle Lake is to be thoroughly tested, in pre-placement monitoring (as per DMP approved by the EAP), and then in accordance with the EA- ERA16 conditions, for a range of applicable parameters, before releasing of tailwaters. The EIS Appendix AI notes reference to extensive periods of historical Water Qualty test results and additional sampling and testing undertaken within the Northern Sands pond. The collection and pumping of tailwater back to the ocean would require a duplication of pump equipment and booster equipment, significant downtime and risk in operational controls, introduce risk of flushing sediment back into the ocean and reduce the management options at the pond in regard to setelement detention times. It was not considered feasible nor was the alternative of duplicating pipelines for similar reasons.
Coastal and Marine Ecology	Along with this, there are real concerns regarding the fact that the dredge spoil is to be piped into voids that are below the water table in the Barron River Delta. The term voids is misleading and does not highlight the fact that the dredge placement will be affecting aquifers. The Barron River Delta is an important part of the Cairns Wetlands. I have serious concern regarding the lack of precedence for this kind of disposal method. There is not an adequate understanding of these voids and the reactions and implications that dumping in them may have.						X		On the basis of extensive baseline seagrass surveys, ground and surface water quality and coastal processes monitoring and computer modelling, the EIS considers that there will be minimal short and long term impact on the water quality and biota of Trinity Inlet, Barron River and near shore waters of the GBR. Groundwater data has been gathered and assessed as per Chapter B6 and Appendices referred there-in. The placement of the dredged material in the Barron Delta void has been extensively modelled and reported in the EIS as has the risks associated with stormwater (flooding) and acid sulfate.

CATEGORY	COMMUNITYCOMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Alongside these issues, the revised EIS states that "Stormwater flows are not likely to impact groundwater levels or quality.", with no evidence of where that information has come from. Stormwater flows almost always impact groundwater, and I would ask for concrete evidence to back the previous statement. Stormwater can cause disruptions to groundwater and the potential displacement of the dredge spoil. If that is the case, there are real concerns of the spoil becoming exposed and creating serious acid sulphate soil issues. There is not precedent or adequate modelling and understanding for this disposal method, particularly given the potential for real environmental harm.								
Coastal and Marine Ecology	Impact on fisheries through habitat loss and food safety risks.The revised EIS (B7 p 79 of 139) makes an unreferenced statement inferring that loss of fish habitat won't result in loss of fishery productivity. It is notable that this comment is not furnished with any scientific references. There are a lot of references which provide data presenting the exact opposite that is, that fishery biomass is closely related to habitat area. Indeed, elsewhere in this chapter the values of the habitats as critical nursery and feeding areas are acknowledged. The notion that seagrass meadows can be lost will a nil sum impact to the existing fisheries and species composition is unscientific opinion. Just the impact of suspended sediment alone is likely to drive a decline in recruitment of species spawning during the period of the dredging project based on peer reviewed literature such as (Partridge & Michael, 2010). A similar effect is likely on important recreational species such as barramundi and mangrove jack. This process is not considered in the impacts assessment. The project lacks a monitoring program to assess this risk, and lacks control measures. Specifically, the project has no baseline aquatic animal health assessment, and no monitoring to ensure that aquatic animal health is not adversely impact by the project. It is notable that the EIS for Gladstone did not predict any harm to the health of fishes or other marine life in that project, however, as illustrated in (Dennis, et al., 2016) substantial impacts occurred due to the project. To avoid repeats and demonstrate learning from these adverse outcomes in the GBRWHA, greater caution is warranted.		X						Reference to this statement could not be found. Numerous scientific studies into habitat value are referenced in Chapter B7 as is the impact assessment methodology, the potential factors influencing benthic habitat and fish (including suspended sediment and turbidity – Section B7.3.4) and the resulting conclusions. There is no notion presented that loss of seagrass meadows would result in nil impact to fisheries and there is no resulting impact prediction to suggest loss of seagrass meadows is likely. As listed in Table Chapter B7 B7-12, Barramundi and Mangrove Jack spawning periods are October- March and Sept-March,outside the project implementation period of May to October with majority of dredging proposed in June- August, which was chosen as it represents the least important life cycle period of the majority of local marine species of direct fisheries significance . Reference to the proposed Reactive Monitoring Programs is clearly stated in the EIS. Chapter B7.4 describes recommended mitigation measures including relevant monitoring programs and refers to the Dredge Magament Plan in Chapter C2 which outilines Reactive Monitoring Programs and illsustrates proposed monitoring sites..

CATEGORY	COMMUNITYCOMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Coastal and Marine Ecology	Onshore, the pipeline will be placed through important costal mangrove systems that we rely on for coastal stability and important fish habitat. The pipeline will require a cleared corridor; "corridor needs to be of sufficient width (7- 10 m) to allow for delivery of the pipe by truck". A corridor which is 5km long. I am concerned at the inevitable loss of important coastal ecosystems and the impacts to Richters Creek, which have not been properly addressed in the EIS. These concerns are also due to the connectivity of Richters Creek to the Great Barrier Reef Marine Park. While the EIS has listed rehabilitation of the site and other mitigations, there is not sufficient justification for this kind of disturbance.		X						To minimize clearing, the downstream Richters Creek pipeline crossing site at which the pipeline comes up onto land at mouth of Richeters Creek was selected to utilize an existing track clearing in the mangroves whilst the upstream crossing was selected as fringing mangrove community width was at its narrowest. As the pipeline is temporary, cleared areas will be quickly rehabilitated resulting in a short term impact to a small area of mangroves (<1200m2).
Coastal and Marine Ecology	The risks are too high - sediment kills coral and any extra in the water column is going to make it harder for the coral to resist the multiple assaults of increasing water temperatures, ocean acidification and resultant vulnerability and bleaching. The GBR is worth more than the financial gains this project can offer		X						As identified in Chapter B5(Marine Water Quality), B7 (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching.

3.4 Do Not Support the Project

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The only reason this project is still on the table is due an to administrative technicality. It still poses the same risks as it would if it was introduced today, but today it would not be accepted under the current legislation.	X							Noted
	This project is poorly thought through. The potential impacts to our natural ecosystem are not justifiable by increased shipping. The Cairns community and the wider global community have a deep value for the Great Barrier Reef and any proposal that threatens the vulnerable ecosystems should be thoroughly and vigorously assessed. I urge the government to reject this proposal as it does not sufficient address many concerns and cannot provide sufficient justification for the project.	X							Noted
	Do not support expansion at the Port of Cairns and the proposed 1 million cubic metres of dredging at Trinity Inlet because: I instead ask you that you seek alternatives to the project that would bolster tourism without the risk posed by new capital dredging.	X							Noted
	The impacts of this proposal have decreased significantly in comparison to the past dredging proposal, which involved 4.4 million cubic metres of dredge spoil that would have been disposed of offshore. We expect however for the revised EIS to be assessed on its own risks, costs and benefits and not considered as the 'better option' or a 'suitable compromise'. Of particular interest is that this project would not be eligible under the current Sustainable Ports Development Act and we ask you to consider the reasons why projects of this nature have now been prohibited outside of designated 'priority ports' when assessing this EIS. This project still poses the same risks yet has been progressed due to an administrative technicality.		X						The recent Demand Study 2016 (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing. Discussions with Navy confirmed that LHC ships would use the Cairns Port if the proposed dredging design was implemented; similarly discussions included projections for foreign Navy vessel usage.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	We would also like to draw your attention to a report prepared for AMCS and WWF by experts at the College of Law and Business, James Cook University. It covers the opportunities and risks associated with Cruise Shipping in Cairns. This was prepared in 2015 for the original EIS but is still largely relevant to the general trends of cruise shipping in Cairns. Overall, it is our opinion that this project poses unnecessary and unjustifiable risks to the environment as: • Alternatives have not been adequately considered; • Alternatives currently exist in the form of anchorage off Yorkey's Knob; and • Economic benefits are questionable given the assumptions made and economic model employed.								
	Do not support expansion at the Port of Cairns and the proposed 1 million cubic metres of dredging at Trinity Inlet because:	X							Noted
	very concerned the risks far outweigh the possible rewards of this project								The recent Demand Study 2016 (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing. The EIS has researched and assessed all potential risks as well as demand and economic assessments in accordance with the Terms Of Reference and concluded generally low potential impacts and large regional and state benefits.
	I do not support expansion at the Port of Cairns and the proposed 1 million cubic metres of dredging at Trinity Inlet because: The discussion really concerns the short term financial benefits for the few from cruise ships against the short and long term effects of both the physical dredging which does stir up the sea bed as well as the only superficially investigated dumping of the spoils.	X							Discussions with Navy confirmed that LHC ships would use the Cairns Port if the proposed dredging design was implemented; similarly discussions included projections for foreign Navy vessel usage. The EIS has researched and assessed all potential risks as well as demand and economic assessments in accordance with the Terms Of Reference and concluded generally low potential impacts and large regional and state benefits.
	I do not support expansion at the Port of Cairns and the proposed 1 million cubic metres of dredging at Trinity Inlet because:								The recent Demand Study 2016 (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing. Discussions with Navy confirmed that LHC ships would use the Cairns Port if the proposed dredging design was implemented; similarly discussions included projections for foreign Navy vessel usage.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	lives at Yorkeys Knob and believes the dredge spoil drift north & deposit toxins along the shore, destroying the amenity of the beachs and threatening the fragile ecosystems already under threat. Not convinced the rewards warrant taking the risks associated with the project								

3.5 Dredging

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredging	The lack of bathymetry study before and immediately after the TSHD Brisbane's proposed pre project maintenance dredging, makes it impossible to assess whether this is solely maintenance dredging immediately prior to the project, or it is also undertaking capital dredging (below 8.3m) and inappropriately depositing that capital spoil in the offshore dump site, with the maintenance spoil within the GBRMPA. GBRMPA should be closely reviewing this activity with some independent oversight of these processes and regulatory control to halt activities which go beyond maintenance dredging. The bathmetry studies (C2-22 of 66) are best undertaken by an independent scientific body (as Government is in essence the proponent as Ports North is a Government owned corporation) to avoid conflicts of interest related to the data generated. Similarly the dredge contractor should not be tasked with monitoring, due to direct conflicts of interest.		X						Ports North routinely conduct pre and post bathymetry surveys following maintenance dredging utilizing a registerd Hydrographic Surveyor, modern survey equipment and MSQ approved standard methodology. The Reduced level of 8.3m below Lowest Astronomic Tide is the current target declared depth for operating the shipping channel throughout each year between annual maintenance dredging. In order to receive the build up of siltation during each year the approved dredge depths are deeper than 8.3m in all channel segment and up to 10m in some segments. Reactive Monitoring Programmes will be overseen by an Independent Panel of Experts
Dredging	The timing of the maintenance dredging, immediately prior to the capital dredging, is likely to reduce the availability of seagrass (as TSHD and offshore disposal occurring) for the project monitoring to assess. Without adequate seagrass levels to begin with, it then loses its validity as a bio-monitor in the capital dredging project. Such that the dredging could cause substantial impairment to recovery, but the yet to be fully designed monitoring and triggers would not detect this degradation. Dredging sensitive areas at night will not act as a successful mitigation to the dredging effects on seagrass, as whilst it may alter light availability, it won't alter the sedimentation risks which are also very important. This should not be considered as a mitigation that is even worthy of trialling. Maintenance of the dredges and stand-down should be planned around the Spring tides when elevated turbidity is already expected (page C2-32 of 66).		X						Trinity Bay and Inlet seagrass condition has been monitored by JCU TropWater and their predessors (DAFF) for over 15 years including as part of the approved Long Term Dredge Spoil Disposal Management Plan requirements and reviewed by the independent Technical Advisory Consultative Committee established for the current 10 year maintenance Dredging Sea Dumping Permit. This process, as well as dredge plume monitoring, has not revealed any impacts to seagrass from maintenance dredging. The annual seagrass surveys are conducted in the later quarter of each calendar year and will be supplemented by predredge seagrass surveys. Results will be avialable for review the Expert Advisory Committee to be established for the Capital Dredging and will be incorporated into dredge management strategies. Impact assessments have been undertaken on the basis of 24 hour per day dredging activities over all relevant tide phases and conditions. As described in the Marine Water Quality Chapter B5.3.6 capacity constraints at the capital dredging placement site restrict it from receiving maintenance dredging material and a cumulative impact assessment based on modelling sequential maintenance and capital dredging has been undertaken.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Dredging	The reduction of overflow dredging appears to be largely left up to the dredge operators opinion. A more rigid set of compliance actions are needed to ensure that responses to exceedances are swift and efficacious.						X		Extent of overflow dredging will be informed by outputs of the Reactive Monitoring Programs
Dredging	The purported environmental benefits from a short dredging campaign have not been clearly articulated, particularly should this short campaign lead to a higher intensity of water quality degradation due to larger CSHD use with more overflow and less retention time for spoil in the DMPA, leading to higher release of fine solids in Barron River. Full consideration should be given to slower dredging, with smaller dredges, and longer breaks to allow environmental recovery during the project.						X		Northern Sands DMPA tailwater discharge quality will be managed to comply with DEHP discharge standards listed in the Environmental Authority to be determined prior to dredging commencement. The Revised Draft EIS process sought to fully understand the dredge material parameters and revise the channel design to minimize impacts by minimizing the dredge quantity and particularly the more problematic stiff clay dredging and select the most appropriate dredging plant and methodologies. This process is described in the Project Background Chapter A2 and Project Description Chapter A3. The statement regarding 'purported environmental benefits from a short dredging campaign"can not be traced to clarify further. However it is noted that there is no proposed use of a CSHD, there will be significent settling times between each dredge load and the TSHD doing 90% of the work will operate in long runs which will tend to de-intensify tubidity plumes. The release of fines into the Barron River is not directly related to the dredging activity rather the receiving pond water quality management. The dredge size selectionand dredging and non-dredging cycle times are presented in Appendix Z. The dredge size selection has to consider sufficient power to pump to material ashore.
Dredging	Tailwater RMP is inadequate as it fails to measure any contaminants to determine if the assumptions within modelling are correct. As a minimum monitoring of total and dissolved arsenic, mercury, aluminium and iron should be performed daily, as the nature of tailwater will change with time, as the Lake Narelle freshwater changes over to become mostly saline dredge spoil slurry.						X		Northern Sands DMPA tailwater discharge quality will be managed to comply with DEHP discharge standards listed in the Environmental Authority to be determined prior to dredging commencement.
Dredging	Oysters are commonly used for measuring the bioavailability of metals. They should also be deployed adjacent sensitive sites in Trinity Bay and adjacent to the intake of the Cairns Fresh Aquaculture facility.						X		The proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. This monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group. Northern Sands DMPA tailwater discharge quality will be managed to comply with DEHP discharge standards listed in the Environmental Authority to be determined prior to dredging commencement

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredging	Presently the tailwater management plan does not clearly articulate how arsenic discharges will be monitored, nor what response would be implemented should discharge levels be found to be above those likely to cause ecosystem harm. There appears to be little immediately available contingency to increase holding times, without halting the dredging operation.		X						The proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. This monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group.
Dredging	Mercury revised EIS assessment insufficient to assess mercury risk in tailwater to receiving ecosystem Levels of total mercury were detected above the screening level in some hotspots. Whilst elutriate and bioavailable concentrations were suggested to be below the ANZECC levels of concern, it does not appear that this has been tested under the likely dilution conditions (pH/alkalinity) of the tailwater or Lake Narelle (potentially acidic), taking into account the likely host phases for sediment associated mercury. The risk of a mixture toxicity from the elevated total mercury, aluminium and elevated arsenic has not been assessed in toxicity studies for relevant local species, including those within the Cairns Fresh Aquaculture enterprise which are likely to be exposed to dilutions of tailwater. Should this project proceed in the dry season, this tailwater will likely generate turbidity and metals elevations significantly above the ambient background levels in the Barron River and Richter Creek. The background mercury levels in water appear to be well below the ANZECC (2000) guideline levels based on data in revised EIS B5 p37. Hence releases associated with the project do pose a risk towards elevating levels over the trigger values.		X						Northern Sands DMPA tailwater discharge quality will be managed to comply with DEHP discharge standards listed in the Environmental Authority to be determined prior to dredging commencement. Refer Water Quality submission below for detailed responses
Dredging	Aluminium impact on Cairns Fresh Aquaculture not assessed. Aluminium is present in high levels in sediments proposed to be dredged in the Cairns Shipping Development. Aluminium is relatively insoluble at pH 6.0 to 8.0.		X						Northern Sands DMPA tailwater discharge quality will be managed to comply with DEHP discharge standards listed in the Environmental Authority to be determined prior to dredging commencement. Refer Water Quality submission below for detailed responses

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	However solubility increases in more acidic or more alkaline conditions resulting in complex toxicity scenarios. Should lime be used to ameliorate acid conditions in the DMPA to reduce toxicity, there is still a risk if water pH rises too high, the Al(OH)4 – anion could become toxic. Dissolved aluminium can exist in various hydroxyl species, which have varying toxicities and are documented to have significant negative impacts for fishes mediated through interference with osmoregulation and at high levels precipitation on gills causing interference with respiration (Gensemer & Playle, 1999). The toxicity of aluminium is well documented in acid waters but can also cause toxicity in alkaline pH levels as reported by (Gundersen, Bustaman, Seim, & Curtis, 1994). It is not evident from revised EIS that adequate assessment has been undertaken for aluminium that may be liberated from sediments once they are deposited into the freshwater (and likely already acidic) Lake Narelle.								
Dredging	(Wilber & Clarke, 2001) reviewed the effects of suspended sediments from estuary dredging and found a wide range of impacts on health and behaviour of fishes. The impacts varied widely with the species and nature of the exposure. Effects were particularly dire on eggs and larvae (early life stages) with fertilisation and hatching failure and direct mortality of larvae common at modest sediment increases. Increased sediment also inhibited feeding in many studies. As fish/crab/prawn larvae only have very small body reserves it is imperative that they feed frequently to survive. A prolonged period of reduced feeding is likely to substantially reduce survival. Should sediments contain contaminants, further deleterious effects on reproduction and early life stages can occur with increasing deformity rates reported.		X						As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal water quality impacts and hence biota impacts primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. Refer Water Quality submission below for detailed responses

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Elevated turbidity tends to decrease phytoplankton productivity by reducing light penetration. Within the context of an aquaculture pond this can reduce the assimilation capacity of the pond to manage nitrogenous wastes.								
Dredging	Validity of modelling for dredge plumes based on peer reviewed scientific literature. The prospect for such plumes is the Cairns project is highly weather dependent. The close proximity to the GBRMPA suggests there is a high risk of incursion of large amounts of dredge plume into the GBRMPA under the current proposal. (Onuf, 1994) documented that one mechanism of propagating a dredge plume was wind-generated wave action leading to resuspension and dispersion of the dredge plume. Cairns Waverider bouy data illustrating wave heights can exceed those used in the modelling. Under such conditions it would be expected that dredge plume impacts would extend over a significantly larger area than is outlined in the EIS and add stress to adjacent hard coral communities.		X						As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal water quality impacts and hence biota impacts primarily restricted to the channel area. Modelling included consideration of resuspension and waves. Water Quality will be closely monitored as per the Environmental Authority and RMP. Refer Water Quality submission below for detailed responses
Dredging	The proposed dredging will only marginally improve the port capacity. Carnival has a five year planning cycle and will have eight seasonally deployed ships in Australia in the future but by 2020 not one will be less than 300 metres.		X						Project planning investigated medium to long term trends including all major cruise companies
Dredging	concerned about impacts of dredging on inshore corals, seagrass and dugongs		X						As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal water quality impacts and hence biota impacts primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. Refer Water Quality submission below for detailed responses
Dredging	convinced the extra dredging is not justified, given that oversized cruise ships can already access Cairns by offshore passenger transfer at Yorkeys Knob.		X						As discussed in Chapter B9 the CSDP will provide highly positive socioeconomic benefits.
Dredging	The current proposal and revised EIS does not meet best practice for dredging in the GBR WHA and has serious deficiencies in many areas.		X						The EIS presents the most environmentally appropriate dredging equipment, methodologies and management plan commitments and will be conditioned by the relevant downstream approval agencies to the standards required by current regulations and policies.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredging	The revised proposed Cairns Shipping Project involves 1,000,000m3 of capital dredging. This estimate is likely an underestimate of the actual volume which will be dredged according to this Queensland Ports report. In this same report, Queensland Ports Authority (2015) also states that over-dredging is generally less than 0.3m over target depths. If this worst case were to take place on this project, it would lead to a ~60% increase in capital dredge spoil volumes. Given this increase has not been accounted for in the plume modelling, it raises clear questions about the validity of model outputs. It also raises questions about the capacity to retain this volume of dredge spoil at the Northern Sands Dredge Material Placement Area (DMPA).		X						The dredge volume estimate has been conservatively based on hydrographic survey, 3D terramodel, a practically achievable overdredging allowance and an appropriate contingency volume. The are no other reports that contain more relevant or detailed volume calculations than the CSD Revised Draft EIS.
Dredging	The Townsville Port Authority has implemented changes to future dredging to align itself with better practice including, avoiding the use of medium-large trailer suction hopper dredges, to avoid generating high volumes of contaminated tail water and thereby reduce dredging plumes. Backhoe dredges and barges and only a small trailer suction hopper dredge barges are to be used. The pace of dredging is also substantially slower. It has also sought to establish improved Environmental Management through guidance of an Independent Oversight scientific panel with powers to halt the dredging operations if the monitoring data exceeds acceptable parameters. The Cairns project should at least meet this same or better standard of practice, being employed in Townsville, given it is also within the GBR WHA.		X						The Townsville project involves diferrent materials and pumping distances and the plant and methodology selection is therefore not directly applicable to the Cairns proposal. Where relevant and better practice backhoe dredging has been proposed with small dump barges. The EIS and Supplementary Report outline an Expert Advisory Panel approach to the project envirnmnetal management.
Dredging	The operation of the TSHD in overflow, does not constitute a least impact methodology to minimise plume generation adjacent sensitive recovering seagrass meadows. The modelling of two overflow options, suggests that the TSHD will be overflowing during the project generating unnecessary plumes.		X						The two modelling scenarios were undertaken to present a range of possible dredging scenarios to ensure the works can be feasibly undertaken and monitoried accordingly. Overflow dredging is considered advantageous in reducing overall dredging time and the number of loads, reducing prop wash and manoevuring induced turbidity as well as reducing the volume of pump water and tail water and therefore achieving better detention settling on the receiving pond. The dredge plume modelling has been based on years of tidal, current and wind data.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The substantial impact of high water velocities during spring tides and high winds, should be considered as times when dredging operations should stand down, to avoid the very high turbidity plumes which are likely to be repeated. Such modified dredge planning would help protect sensitive target sites (seagrass and corals) within the GBRWHA and GBRMPA.								
Dredging	Project outcomes will contradict aims of Commonwealth Reef 2050 Plan.	X							The project is being assessed under the SDPWO Act and EBPC Act and the EIS has addressed the applicable Terms of Reference including Cliamte Change, Hazard and Risks, Cummulative Impacts and EPBC Act issues.
Dredging	The EIS states that maintenance dredge volumes are anticipated to increase by only 2-6%. This seems highly questionable given the following increases in the footprint of the channel		X						This submission notes a 20% increase in channel footprint and suggests that implies >6% increase in maintenance dredging. Table A3.1 actually tallies up the total (including swing basins) increase in the proposed designated navigational areas as 19%. Many parts of this area are already at depth(as indicated in the plans and sections of Appendix J) and require no dredging or change to sea bed depths. The predictions in the EIS are based on comprehensive hydrodynamic modelling.
	Assessment of risks to GBRMPA fails to account for cumulative risk of all Ports to the total risk for the reef..								A comprehensive range of potential cumulative impact issues at various scales have been identified and addressed in Chapter B18.

3.6 Dredge Material Placement

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Dredge Material Placement	Tingira Street has been chosen as the site for the dumping of the stiff clay portion of dredge spoil for the Cairns Shipping Development Project. This is 10%, or 100,000 cubic metres of the proposed 1m Cu M total proposed for the Trinity Inlet dredging. The remaining 90% is proposed to go to Northern Sands Barron Delta Voids north of Cairns. This submission will only deal with the 10% Tingira St component. Introduction Tingira Street site is a well-known location amongst birdwatchers both locally and internationally. An impressive 111 species of bird have been recorded there including 22 migratory and resident shorebirds. It is a reliable site to observe certain species of difficult to find birds, such as Latham's Snipe (Gallinago hardwickii), Beach Stone-curlew (Esacus magnirstrus) and rare birds like Ruff (Philomachus pugnax). Tingira St contains two distinct habitats which both need careful consideration for their conservation value, cultural and community value, and aesthetics. One habitat is the salt marsh at Number 6 in the Figure 1. Numbers 1-5 are grassland areas of value. Numbered areas 5 and 6 in yellow are the areas currently proposed for dredge spoil dumping in the Draft EIS.		X						The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by encroaching port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however encroaching port development will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies.
Dredge Material Placement	Point 3. Placement of displaced waters of existing Narelle Lake, and excess wash from the dredge project. The existing Narelle Lake dump contaminated water would be displaced by the dredge spoil and wash and it is proposed to be routed directly into the Barron River, the 3.5m cu mtr excess water associated with the spoil, some of it with acid sulphate issues, will also be redirected directly into the Barron River and this is an issue.		X						As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal water quality impacts and hence biota impacts primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. Refer Water Quality submission below for detailed responses It is expected that a condition relating to management of this issue will be provided by the OCG

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The Barron River is a very short system and already has plenty of problems with water quality ie Cairns sewer outfall with strongly suspected legacy formaldehyde/glutaraldehyde (past aircraft sewer treatment) contamination, upstream primary sewers, Tinaroo dam and catchment and Barron delta agricultural contaminant runoff, 2 x commercial dumps in the delta - adjacent to the Barron and likely groundwater connected, alleged Cairns Airport Aviation fuel leak (6 years) and fire fighting foam contamination to name a few. Also there is evidence of a strong drop in mud and sand crab population in the last couple of years and soldier crab colonies at the mouth disappeared some years back, some have had strong concern that pollution has caused this with the dump site raising eyebrows especially since opening it up to the public general refuse. The Barron River lies in the centre of the recently declared commercial fishing gill net free zone (NFZ) and fish stocks are recovering. Considering the social and ecological sensitivity of the Barron River, it would seem inconsistent with current water quality values to further risk or introduce contamination, turbidity or salinity problems. Water in the Narelle Lake needs thorough testing before moving it anywhere and should be subject to further scrutiny regardless of whether the dredge project proceeds or not.								
Dredge Material Placement	Dumping spoil at Tingira Street would destroy habitat considered to be important by local birdwatchers who assert that further surveys are needed to establish the potential of the site as essential habitat for Latham's Snipe as per the Japan-Australia Migratory Bird Agreement.		X						The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by encroaching port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species. The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however encroaching port development will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies.
Dredge Material Placement	Along with this, there are real concerns regarding the fact that the dredge spoil is to be piped into voids that are below the water table in the Barron River Delta. The term voids is misleading and does not highlight the fact that the dredge placement will be affecting aquifers. The Barron River Delta is an important part of the Cairns Wetlands. I have serious concern regarding the lack of precedence for this kind of disposal method. There is not an adequate understanding of these voids and the reactions and implications that dumping in them may have. Alongside these issues, the revised EIS states that "Stormwater flows are not likely to impact groundwater levels or quality.", with no evidence of where that information has come from. Stormwater flows almost always impact groundwater, and I would ask for concrete evidence to back the previous statement. Stormwater can cause disruptions to groundwater and the potential displacement of the dredge spoil. If that is the case, there are real concerns of the spoil becoming exposed and creating serious acid sulphate soil issues. There is not precedent or adequate modelling and understanding for this disposal method, particularly given the potential for real environmental harm.		X						As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal water quality impacts and hence biota impacts primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. Refer Water Quality submission below for detailed responses It is expected that a condition relating to management of this issue will be provided by the OCG.
Dredge Material Placement	I am concerned that the Tingira Street DMPA, site for the dredge spoil disposal, has not been adequately assessed to determine the potential of the site as essential habitat for Latham's Snipe as per the Japan-Australia Migratory Bird Agreement. These agreements and considerations should be well detailed in the EIS.		X						The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by encroaching port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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									The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however encroaching port development will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies.
Dredge material placement site	A full environmental impact assessment was not undertaken on the East Trinity land placement site. We submit that the total project using East Trinity for the 2015 project may be estimated at $252m NOT $365M. In addition, we submit that the development option was grossly inflated and based on several erroneous assumptions	X							East Trinity is not part of the current project which is the subject of the RDEIS. The RDEIS Appendix I is a detailed Dredge Material Placement Options Study which concluded that 2 options warranted further investigation : Barron Delta Placement Precinct Trinity East Placement Precinct. A subsequent detailed analysis of these options was undertaken as documented in RDEIS Chapter A2 – Project Background. In Section A2.7.2 the Barron Delta DMPA was identified as the preferred disposal site on the basis that: "East Trinity has five issues where medium level impacts arose compared to low to negligible for Barron (Soil/Geology, Marine Ecology, Terrestrial Ecology, Air Quality and Cultural Heritage) compared to just one area (dredge Logistics) where it had a slightly superior outcome."
Dredge material placement site	Given that the 2015 draft proposal was a 25-year project plan and the on-shore sediment placement cost is only $46 per m3, as opposed to the currently proposed $73 per m3, the 2015 plan is by far the most economical option for this publicly funded project.	X							East Trinity is not part of the current project which is the subject of the RDEIS. The RDEIS Appendix I is a detailed Dredge Material Placement Options Study which concluded that 2 options warranted further investigation : Barron Delta Placement Precinct Trinity East Placement Precinct. A subsequent detailed analysis of these options was undertaken as documented in RDEIS Chapter A2 – Project Background. In Section A2.7.2 the Barron Delta DMPA was identified as the preferred disposal site on the basis that:

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									"East Trinity has five issues where medium level impacts arose compared to low to negligible for Barron (Soil/Geology, Marine Ecology, Terrestrial Ecology, Air Quality and Cultural Heritage) compared to just one area (dredge Logistics) where it had a slightly superior outcome."

3.7 ECONOMIC –TOURISM

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Economic-Tourism	We fully support the dredging of the Cairns Shipping Channel with the dumping of spoil on the East Trinity site: To allow unimpeded access to the Port of Cairns to tourist and commercial shipping.		X						As discussed in Chapter A2 , the East Trinity site was not preferred as the DMPA because of a number of high and medium constraints including visual amenity, landuse incompatibility, acid sulfate soil management legacy and cultural heritage
Economic-Tourism	A review of the Ports North Cruiser Liner Schedule for 2017 reveals that 60 ships are scheduled to dock at the Cruise Liner Terminal at Trinity Wharf in Cairns, of which the 13 are longer than 260 metres with the longest being the Legend of the Seas at 264.26 metres. Another 19 ships are scheduled to anchor off Yorkeys Knob of which 11 are less than 260 metres long, 5 are between 260 metres and 300 metres and only 3 are longer than 300 metres. So of the 79 cruise ships scheduled to visit Cairns in 2017 only 8 could not dock at the Cruise Liner Terminal, which is only 10% of the cruise ships visiting the area certainly not the claimed 50% in the draft EIS. The question that should be asked of Ports North is why 11 cruise ships that could dock at the Cruise Liner Terminal would rather anchor off Yorkeys Knob, with all the additional difficulty that creates for passengers wishing to visit Cairns. Perhaps the docking fees are a disincentive to actually using the Cruise Liner Terminal? therefore I believe that there is not established need for this dredging and this project.		X						There are 60 scheduled cruise ship visits in 2017 to Cairns Cruise Liner Terminal. The 13 visits of ships longer than 260m are all by the 264.26m Legend of the Seas and three 261m Sun class vessels (Sun Princess, Sea Princess and Dawn Princess which was re-named Pacific Explorer) These vessels are all of superior maneuverability than the vessels less than 260m long that have to moor off Yorkeys Knob due to inability to safetly navigate the existing Cairns Shippping Channel. All these current vessels longer than 260m (and most vessels >240m) entering the Cairns Shipping Channel have been assessed by Simulation and approved by Marine Safety Queensland. A large proportion of the 19 Yorkeys ship visits 11 are by Regal class vessels only 245m long but not maneuverable enough to enter the channel. The demand study components of the EIS identify the replacement of these older Regal class vessels with larger vessels in the future. Ports North docking fees are regularly reviewed and benchmarked against other ports and are less than most others.
Economic-Tourism	• In accordance with the Reef 2050 Plan, all proponents must demonstrate that the project is commercially viable. There are a lot of assumptions that Cairns would be a competitive home port, which is debatable. Additionally, the possibility of expansion of the naval base is untested. • While cruise ships can bring some benefits to the local economy, these benefits tend to be constrained as so much of passengers' discretionary spending occurs on board. This is especially relevant with the increased need for large cruise ships to recoup costs lost through reduced ticket sale prices.		X						The economic benefits of the project are throroughly assessed and described in the Revised Draft EIS. The ecomomic assessments were on 16 different scenarious including with continued home porting and without continued home porting. As summarized in section 11 of Appendix AQ of the Revised Draft EIS the HMAS Navy Base Expansion has not been included in the economic justificationof the project. The capaital dredging component of the project required to facilitate the future HMAS Cairns Base Expansion is relatively minor. Passenger spending (over 400 passengers) was surveyed for 8 visiting vessels in 2017 and the resulted considered and reports along with other port passenger spending data in the economic assessments of the EIS (refer Appendix AQ).

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Economic-Tourism	Economic Benefits and Business Case for expansion Appendix 1 of this submission assesses the economic benefits and risks of increased cruise ship tourism in Cairns. The analysis was undertaken for the previous EIS in 2015 but much of the information in regards to demand and future projections of cruise shipping remains relevant. Namely: - With or without the port expansion cruise ship visits to Cairns will continue. Cruise Lines International Association 2014 found that whether a cruise ship docks in a port or anchors off shore and transfers passengers by smaller boats to land actually makes little difference to the number of people disembarking and coming to explore the local area. Additionally, if ship size forces cruise lines to eliminate passenger tendering altogether, this would preclude calls to all but the largest ports—a dramatic change to the industry's prevailing business model. - It is unclear how many mega cruise ships will be part of Australasia/South Pacific market. Cruise lines' decisions to build new mega ships will continue to be a product of the long-term outlook in the North American and European passenger source markets, rather than the Australasian market. In 2016 two new vessels will be launched into the Australian market that can navigate Trinity Inlet, illustrating that the cruise ship industry in Australasia is continuing to operate a range of ship sizes. -Mega cruise ships can compete directly with land based tourism. Ticket prices are heavily discounted to ensure full capacity. These prices often don't cover the operational costs so ships must compensate by capturing more on-board revenue. - Making Cairns a homeport for mega ships will be difficult for several reasons. First, due to the city's remoteness, small regional population and limited industrial infrastructure, Cairns is poorly suited to serve as a homeport for mega ships. The previous draft EIS even acknowledged this (Appendix D.6), which states that "Cairns and the region within driving distance of the port do not have a sufficient population base to sustain base porting, particularly for a large ship" (BMT WBM, 2014, p. 25).		X						Since the publication and response to the original Draft EIS the project scope (cost and target cruise ship range) has been altered and the demand studies and ecomonic assessments updated accordingly. The Revised Draft EIS demand study includes assessment of market and logistical constraints specific to the project area. The Revised draft EIS demand study included updated consultation with cruise ship companies and assesments on the likely ship build and deployment scenarios. Land based tourism opportunities are a significant marketing attraction in the selling of cruise itenaries and also provide another potential revenue component for cruise companies selling the land based tours. It is notedthat land based tourism benefits from the visiting cruise ships. P&O are currently homeporting the Pacific Eden at the Cairns Port with another seven home porting cruise ship visits booked for for 2018. Since the original Draft EIS was published in 2015 home porting has been trialed with resounding success, attracting bookings from throughout the region and increasing opportunities for local suppliers to service the ships needs.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	Second, growth in the Australian cruise destination market is currently being driven overwhelmingly by local residents rather than by international visitors. The Australian passenger source market is not currently large enough in absolute terms to support a large scale, permanent redeployment of existing mega-class ships to the region. 41% of current cruise ship passengers are from NSW. It would be difficult to see Cairns compete as a homeport against the likes of Sydney as people go on cruise ships to enjoy the cruising experience and would be unlikely to fly from Sydney to Cairns if they could board at home. Third, due to the monsoon season, tropical North Queensland may be less attractive as a homeport region for ocean cruising in the high-volume summer months. Competition could take tourism revenue away from other areas of tourism in Cairns or other areas of Queensland. Land based tourists spend more than cruise ship tourists in Cairns. If just 1% of that existing $2.6 billion in expenditure were 'lost' due to increased competition from cruise ships, perceived 'mainstreaming' or 'congestion' by tourists, or reduced air or water quality, the potential negative side-effects of the project would be on the order of $26m per annum. Such losses would outweigh the project's estimated benefits. There is little excess mega-ship berthing capacity currently deployed in Australasia. Without a surplus of berthing capacity, increased competitiveness of Cairns as a cruise tourism destination necessarily entails a siphoning of existing business from other Australian ports—principally Brisbane—in the short-to-intermediate term. No clear evidence that the Naval base expansion within Cairns Port is wanted. Limited evidence is provided to justify additional dredging to allow for naval expansion in Trinity Inlet. The EIS appears to be relying on a build it and they will come philosophy but as this will require taxpayer dollars to bankroll the project a very strong business case and justification is required- which does not currently exist.								

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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	- Economic benefits of the project: In Appendix D.9 of the original draft EIS, the proponent explicitly assumed an average of 1.5 nights in port for mega-ship passengers, which was an overestimation as mega ships are highly unlikely to spend this much time in port (current estimates of overnight stays are based on smaller ships). Hence estimates of passenger and crew spend based on these durations in excess of 12 hours are likely to be exaggerated. The revised draft EIS seems much more opaque regarding its assumptions. Estimated passenger days in port are reported without clear indication of ship passenger capacity, domestic/international passenger makeup (whose spend differs substantially - they've used a non-weighted 'average'), time actually spent in port, etc. homeport region for ocean cruising in the high-volume summer months.								
Economic-Tourism	The first draft of the EIS identified there was an extreme risk that increased cruise liner visitation of the port would cause such disruption to environmental values that it would attract local and national adverse publicity. If the mitigation strategies are not put in place as recommended and the port does succeed in attracting more vessels that are not properly equipped and adopting safe environmental practices there will be such adverse publicity. This may disrupt the economy of Cairns given it is based around tourism which in turn is based around the proposition that it is an environmentally desirable place to visit. This negative aspect of the proposed Port development should be addressed in the planning stages by the implementation of mitigation strategies as recommended by the consultant immediately rather than in more than one decade's time.		X						Ports North will continue to conduct all activities to “best practice” in accordance with their Environmental Policy(Appendix B); this includes cruise ships at berth. As discussed in Section 2.2.2 (Air Quality) Ports North will ensure this will liaise with Cruise companies to ensure this is occurring. The first Draft EIS and the current Revised Draft EIS do not conclude any residual risk assessments in the extreme category based on the proposed mitigation measures.
Economic-Tourism	There is evidence that indicates Cairns would not be competitive as a home port even if the infrastructure was built There is a viable alternative with ships already anchoring off Yorkey's Knob. Whether a cruise ship docks in a port or anchors off shore and tendering passengers in has actually been found to make little difference to the number of people disembarking and coming to explore the local area		X						P&O are currently homeporting the Pacific Edenat Cairns Port with seven homeport visits scheduled in 2018. The recent Demand Study 2016 (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
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Economic-Tourism	An entire new main swing basin will be dredged under the proposal that has nothing to do with cruise ships. It is purportedly to allow naval base expansion however no clear investment commitment has been made. Neither has the Royal Australian Navy indicated that any of the larger LHC ships would be based in Cairns.		X						Discussions with Navy confirmed that LHD ships would use the Cairns Port if the proposed dredging design was implemented similarly discussions included projections for foreign Navy vessel usage. The RAN has actively participated in simulation of the proposed channel expansions to enable larger RAN ship to enter Cairns.
	Economic Model We are concerned that the economic benefits may be overstated due to the input-output model used in the assessment. This issue was brought to the public's attention following the Adani court case which highlighted that varying economic models can produce vastly different figures (E.g. in the Adani case, one produced 10,000 direct and indirect jobs, where the other produced 1464). We would direct your attention to two articles, one by the Productivity Commission which discusses how Input-Output multipliers are regularly "abused" and one by the ABS that asserts the input-output multipliers are "biased". Excerpt from ABS article - While I–O multipliers may be useful as summary statistics to assist in understanding the degree to which an industry is integrated into the economy, their inherent shortcomings make them inappropriate for economic impact analysis. These shortcomings mean that I–O multipliers are likely to significantly over–state the impacts of projects or events. More complex methodologies, such as those inherent in Computable General Equilibrium (CGE) models, are required to overcome these shortcomings. We expect the process reviewing the economic or business case for this project to consider the model used and the implications on community support for the project. If benefits are found to have been significantly overstated, government funding commitments should be withdrawn and the public given the chance to review and comment on the revised economic assessment.		X						Economic benefit modelling conducted for the Revised Draft EIS by reputable consultants incorporated current survey derived local passenger expenditures and clearly identified the economic benefits of the CSDP project.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Economic-Tourism	The revised EIS has listed the main benefit of this project as to "take advantage of cruise shipping opportunities". These cruise ships are already visiting the Cairns region, docking off Yorkey's Knob. While sometimes limited by this process that is the outcome of the need to protect our natural assets by not disrupting important ecosystems. A disruption which will occur if future dredging is allowed. Apart from further cruise shipping, the proponent sites other 'benefits' such as increasing Navy and Cargo opportunities. These opportunities have no commitment behind them, as there is no evidence for these future developments. The proponent has not demonstrated a sufficient 'need' for the project, as these cruise ships already visit Cairns, and eluding to 'potential' expansion of shipping and navy operations does not provide enough evidence of need. I understand that the Cairns and Far North Environment Centre will be raising key issues around the economic model used to determine project benefits. The input-output multipliers for the 5.2 billion uses the appropriate application of the model. However using it for projects leads to over-stating the benefits. As a result the economic justification for this project is flawed.		X						Economic benefit modelling conducted for the Revised Draft EIS by reputable consultants incorporated current survey derived local passenger expenditures and clearly identified the economic benefits of the CSDP project.
Economic-Tourism	Oversized cruise ships can already access Cairns through offshore passenger transfer at Yorkeys Knob.		X						The recent Demand Study 2016 (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing.
Economic-Tourism	Company has strong interest in investing in Cairns based on the current cruise ship visitation and the CSD project. Should the project be given approval, we will certainly invest and employ people in Cairns as a result.	X							Noted
Economic-Tourism	Company considers the EIS to be very detailed and thorough. However, of particular interest is the demand study, found at Appendix D6 (DEIS - Cairns Cruise Shipping Development - Demand Study). We believe that this demand study is outdated and too conservative in its predictions. The demand study states it was commenced in 2011 and updated in 2014.		X						Economic benefit modelling conducted for the Revised Draft EIS by reputable consultants incorporated a 2016 update of the demand study and 2017 survey of visiting passenger expenditures and clearly identified the economic benefits of the CSDP project.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The cruise industry in the South Pacific, particularly in Australia has continued to grow significantly since that time, yet the study does not reflect this. Proponent has submitted evidence the predictions found in Table 2 (see submission). Due to the age of the study, the demand without improved infrastructure predictions can be compared with current bookings. The comparison shows that in 2017 the cruise ship numbers for Yorkeys Knob and Cairns already match that of the prediction of 2026 (79 ships). The cruise ship bookings for Yorkeys Knob and Cairns for 2018 (90 ships) far exceeds the predictions forecast in the demand study.								
Economic-Tourism	It is not clear in the 2017 revised draft EIS Economic Analysis or Economic Assessment if there is appropriate provision of bunker fuel that will increase visits by 10%. It is noted that for the scenarios analysed there is NO provision for bunker fuel.		X						As summarised in Chapter B9.3 the demand projectionsand economic analysis included assessments with and without the provision of bunkering.
Economic-Tourism	The project proposed in the 2017 revised draft EIS needs to be Stage One of an ongoing expansion on the shipping channel. In the immediate future further expansion plans to cater for the Voyager Class cruise ships are vital.		X						The original Draft EIS did not conclude a viable land based project solution for the channel expansions required to accommodate the Voyager Class vessels. The current project proposal does not present, nor did the preceding scoping and options studies identify) a feasible land disposal site for the volume of capital dredging required to accomodate the Voyager class vessels.
Economic-Tourism	We also support the items raised in the WWF/AMCS submission in relation to the purported economic benefits and business case including: • With or without the port expansion cruise ship visits to Cairns will continue • It is unclear how many mega cruise ships will be part of Australasia/South Pacific market • Mega cruise ships can compete directly with land based tourism • Making Cairns a homeport for mega ships will be difficult for several reasons • Competition could take tourism revenue away from other areas of tourism in Cairns or other areas of Queensland		X						The recent Demand Study 2016 (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing. The Revised draft EIS clearly identifies the projected demand or cruise ship demand based on the existing situation and comparative economic benefits in undertaking the project proposal. Land based tourism opportunities are a significant marketing attraction in the selling of cruise itenaries and also provide another potential revenue component for cruise companies selling the land based tours. It is notedthat land based tourism benefits from the visiting cruise ships P&O are currently homeporting the Pacific Eden at the Cairns Port with another 7 home porting cruise ship visits booked for for 2018.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	• No clear evidence that the Naval base expansion within Cairns Port is wanted In relation to naval base expansion we add, there is no clear investment commitment to naval base expansion. Ports North have confirmed that the Smith Creek Swing Basin that is proposed to replace the existing main swing basin is for naval expansion and not cruise ships. Without a clear investment commitment, this element of the dredging works should be removed from the dredging program.								Since the original Draft EIS was published in 2015 home porting has been trialed with resounding success, attracting bookings from throughout the region and increasing opportunities for local suppliers to service the ships needs. As summarized in section 11 of Appendix AQ of the Revised Draft EIS the HMAS Navy Base Expansion has not been included in the economic justificationof the project. The capaital dredging component of the project required to facilitate the future HMAS Cairns Base Expansion is relatively minor.
Economic-Tourism	Oversized cruise ships can already access Cairns through offshore passenger transfer at Yorkeys Knob.		X						The Demand study components of the EIS do assess the projections for ongoing visitation of Cairns and Yorkeys Knob without the project and present the comparative benefits of undertaking the proposed project.
Economic-Tourism	The marine park tourism industry is vital for the Cairns economy. Employment can still thrive without new capital dredging in Trinity Inlet, which would further degrade the poor water quality around the Cairns region.		X						The Revised Draft EIS presents the additional economic and employment benefits of the project. As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal water quality impacts and hence biota impacts primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP.
Economic-Tourism	The marine park tourism industry and associated employment opportunities can be expected to benefit if new capital dredging in Trinity Inlet is avoided, because the proposed dredging would further degrade the poor water quality that degrades the reef and broader marine environment of the Cairns region.		X						Refer Water Quality submission below for detailed responses
Economic-Tourism	Would dredge the channel to let tourists in but risk damaging the environment they are coming to see? Cairns is a tourist town - people come to see the environment, therefore the environment should be the first priority, people second I have had many friends and family arrive in cairns via Yorkeys on a cruise ship and not one of them had lamented that it didn't pull into town: Not convinced the rewards warrant taking the risks associated with the project Oversized cruise ships can already access Cairns through offshore passenger transfer at Yorkeys Knob.		X						The commentary above has addressed these issues.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The marine park tourism industry is vital for the Cairns economy. Employment can still thrive without new capital dredging in Trinity Inlet, which would further degrade the poor water quality around the Cairns region. Proposal arose from a ill-conceived election grab-bag of "big ideas" and not from any real analysis of need or cost-benefit: It is a thought bubble that now needs to be popped for good.								

3.8 Environmental Offsets

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Environmental Offsets	Point 4. Offsets It appears offsets have not been investigated or discussed? The majority of the works will be in the new Cairns Net Free Zone and will definitely affect fish/ecology. This will have impact on local and tourist fisher experience for an uncertain amount of time. Some discussions were held previously that included the installation of a series of artificial reefs within the NFZ to the benefit of recreational fishers. xxxxxx would be happy to discuss such as required. Local commercial fishers would also be affected and would have interest in this.		X						Impact on community access to recreational and indigenous fishing is expected to be negligible given navigation in Trinity Inlet, Richters,Thomatis Creeks will be unimpeded by the temporary pipeline, and not a permenant impact to access. The proposed area expansion of the channel is within the existing leads and declared channel navigation zone.Commercial Fishing activities (net or trawl) are currently not permitted in the channel area and hence there is no loss of commercial fishing opportunity. The extent of habitat modification in an ecological sense is effectively the removal of the upper surface sediment layer in the dredging areas which will be re-established by sedimentary processes over the year as evidenced by Ports Norths long history of annual channel surveys and maintenance dredging requirements. This upper surface sediment within existing channale footprint is subject to annual maintenance dredging disturbance and such impacts on ecological/fisheries productivity function was assed in existing approvals, and will be a consideration in the assessment of the amendment of such existing maintenance dredging approvals to reflect the footprint of channel arising from these capital works. Recolonization and recovery rates for assocated benthic flora/fauna are therefore expected in the short term as evidenced in previous studies.Areas of dredging, dredge mooring point and pipeline route are within the recently declared net free zone, and westward of the zone in which trawl is permitted. Ports North will provide the community and fishing industry suitable advanced notification of dredging locations and timing. It is therefore considered that a Fisheries Adjustment will not be applicable. Offsets are addressed within the document, in way of agreed in principle area swap for the changes to the FHA and Marine Park Boudary adjustment, which includes consideration of the contribution of these areas to fisheries/benthic productivity. The project implementation period from may to October with the majority of the dredging proposed in June –August, which was chosen as it represents the least important life cycle period of the majority of local marine species of direct fisgeries significance. As identified in Chapter B5 (Marine Water Quality).B7 (matine Ecology), the project will have negligible impact on inshore marine habitats and biota.

3.9 Fish

CATEGORY	AGENCY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Impact on fisheries through habitat loss and food safety risks.The revised EIS (B7 p 79 of 139) makes an unreferenced statement inferring that loss of fish habitat won't result in loss of fishery productivity. It is notable that this comment is not furnished with any scientific references. There are a lot of references which provide data presenting the exact opposite that is, that fishery biomass is closely related to habitat area. Indeed, elsewhere in this chapter the values of the habitats as critical nursery and feeding areas are acknowledged. The notion that seagrass meadows can be lost will a nil sum impact to the existing fisheries and species composition is unscientific opinion. Just the impact of suspended sediment alone is likely to drive a decline in recruitment of species spawning during the period of the dredging project based on peer reviewed literature such as (Partridge & Michael, 2010). A similar effect is likely on important recreational species such as barramundi and mangrove jack. This process is not considered in the impacts assessment. The project lacks a monitoring program to assess this risk, and lacks control measures. Specifically, the project has no baseline aquatic animal health assessment, and no monitoring to ensure that aquatic animal health is not adversely impact by the project. It is notable that the EIS for Gladstone did not predict any harm to the health of fishes or other marine life in that project, however, as illustrated in (Dennis, et al., 2016)substantial impacts occurred due to the project. To avoid repeats and demonstrate learning from these adverse outcomes in the GBRWHA, greater caution is warranted.		X				X		Dredging and Construction Environmental Management Plans are included in the Revised Draft EIS which provide a framework for managing the key risks identified. These Plans will need to be refined as part of detailed design and incorporate relevant CGER stated and imposed conditions and any associated "downstream" approval conditions. The Plans will include subordinate issue-specific Environmental Management Plans to address impacts to marine ecology. Management, monitoring and mitigation of water quality impacts will be stipulated in the Environmental Authority (ERA 16) to be negotiated and approved by DEHP prior to project commencement. The extent of habitat modification in an ecological sense is effectively the removal of the upper surface sediment layer in the dredging areas which will be re-established by sedimentary processes over the year as evidenced by Ports Norths long history of annual channel surveys and maintenance dredging requirements. This upper surface sediment within existing channel footprint is subject to annual maintenance dredging disturbance and such impacts on ecological/fisheries productivity function was assed in existing approvals, and will be a consideration in the assessment of the amendment of such existing maintenance dredging approvals to reflect the footprint of channel arising from these capital works. Recolonization and recovery rates for associated benthis flora/fauna are therefore expected in the short term as evidenced in previous studies. The potential impact of dredged sediment plumes and associated re-suspension modelled and assessed and reported in the Revised Draft EIS. The Gladstone project referenced was significantly larger in scope to this proposal and the dredged material placement fundamentally different. Both Reactive and Validation Monitoring Progams will be implemented under the direction of an Expoert Advisory Panel,

3.10 Flooding

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Flooding	Assessment of flood impacts The revised EIS states that "Stormwater flows are not likely to impact groundwater levels or quality" but provides no reference of where that information has come from. We request that in assessing the EIS, the assessing officers ensure groundwater movement in the 1% AEP scenario has been taken into consideration. The implications of groundwater movements in high rainfall events in relation to migration of saline water, acid, nutrients and metal contaminants are of concern. Particularly in the long term once bunds are removed.		X						As identified in Chapter B17 Section B17.4.1.f the project will create minimal afflux impact on the Captain Cook Highway assuming bund heights of 7.5m AHD; velocities in the order of 0.5m/s are anticipated which will not result in damage to the road surface. The revised NS DMPA concept design includes bunding to 5.5m AHD (ARI 100) therefore afflux impact for events in excess of ARI 100 floods will not occur. Notwithstanding this Ports North will rerun the flood model for the revised site development case. The groundwater plume risk is expected to be low under the revised DMPA concept design because of substantially reduced operating water levels and hence driving head pressure on the surface aquifer.

3.11 FAUNA TERRESTRIAL

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Fauna-Terrestrial	B. Salt Marsh (Numbered 6 in Figure 1) This site is adjacent to the existing barge ramp in the smaller yellow demarcated plot (Number 6 in yellow in Figure 1) This may be the last remnant coastal wetland in inner city Cairns. It should be preserved for a number of reasons. • **Bird Habitat** Although the number of migratory and resident shorebirds is variable, the ones present are significant for their rarity. Over 22 species of migratory and resident shorebirds have been recorded here including: Beach Stone-curlew, Ruff Red-kneed Dotterel and Latham's Snipe (ebird.org/ebird/australia/printableList?regionCode=L2540955&yr=all&m=). Numbers of species of wader greater than 15 are of significance to conservation (EPBC Act Policy Statement 3.21- Significant Impact Guidelines for 36 Migratory Shorebird Species page 10- 11). Beach Stone-curlews, which are listed as Vulnerable in Queensland under the Nature Conservation Act 1992, also nest here with a pair currently sitting on eggs (late August 2017). • **Accessibility** There is easy accessibility by the Cairns' community of a unique ecosystem. Local and international birdwatchers use this site to see the Beach Stone-curlew and rare birds such as the Ruff. • **Aesthetics** A large mound of stiff clay dredge spoil is unsightly. At present the site is weed infested only because soil was dumped there. With a little effort the site could be restored as a visitor attraction.		X	X					The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by encroaching port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species. The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however encroaching port development will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies. A further report of the Tingiras St land will be provided in the Supplemetary Report. The Tingira Street land proposed for the material placementis freehold strategic port land approved for industrial development. Public access will continue to diminish as the remaining vacant land is developed. Stiff Clays will be placed to a maximum depth of 2.5m, as the necessary surcharge to improve the land for future development, for port activities.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Fauna-Terrestrial	Concerned about losing important bird habitat at Tingira Street		X	X					The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by encroaching port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species. The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however encroaching port development will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies. A further report of the Tingiras St land will be provided in the Supplemetary Report.
Fauna-Terrestrial	Our key environmental concerns relate to: Tingira Street DMPA - Bird habitat at the Tingira Street DMPA Reports from prominent local birdwatchers indicate that parts of the Tingira Street DMPA could be of international significance for the migratory shorebird, Latham's Snipe (Gallinago hardwickii), and assert that further surveys need to be conducted to establish the potential of the site as essential habitat for Latham's Snipe as per the Japan-Australia Migratory Bird Agreement.		X	X					The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by encroaching port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species. The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									Potential habitat areas noted by submitters will be retained on site as much as possible, however encroaching port development will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies. A further report of the Tingiras St land will be provided in the Supplemetary Report.

3.12 General Comments

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
General Comments	The xxxxxxxxx appreciate the opportunity to review the Revised Draft Environmental Impact Statement for the Cairns Shipping Development Project. Due to time constraints, we have not commented on the full document in detail, instead providing detailed comments only on specific sections and areas of concerns. We acknowledge that the impacts of this proposal have decreased significantly in comparison to the previous scope of this dredging project, which involved 4 million cubic metres of seabed that would have been disposed of offshore. Consequently, the amount of maintenance dredging required has also been reduced. However, as the project relies on a level of self-cleaning of the channels it is unclear whether there will be a commensurate increase in background resuspension of sediments from self-cleaning channels which could negatively affect the ambient turbidity and water quality of the immediate areas. In addition, we have enclosed a report prepared for us by experts at the College of Law and Business, James Cook University. It covers the opportunities and risks associated with Cruise Shipping in Cairns. This was prepared in 2015 for the original draft EIS but is still largely relevant to the general trends of cruise shipping in Cairns.		X						As discussed in Chapter B4 and Appendix AJ (Marine Water Quality Assessment) p63 Modelling was performed with a subsequent 12-month re-suspension period following dredging. The results are presented as zones of impact maps for dredging and placement at the existing DMPA (Figure 2-28) and the 12-month resuspension period following placement at the existing DMPA (Figure 2-29). Since the publication and response to the original Draft EIS the project scope (cost and target cruise ship range) has been altered and the demand studies and ecomonic assessments updated accordingly in the Revised Draft EIS.
General Comments	Introduction: Ponderosa Prawn Farm (Lot 2 RP 894172) is a 44.76Ha Aquaculture facility located approximately 600m to the North of the proposed Dredge Material Placement Area (DMPA) on the Barron Delta (16°50′40″S 145°43′04″E). The property is owned by Cairns Fresh Seafoods Pty Ltd. The facility is a multispecies facility growing fish (Qld Grouper E. lanceolatus, Gold Spot Cod E. cooidies, Barramundi L. calcarifer and marine Prawns (P. monodon and M. merguinesis) and is licensed for many others.	X							Noted The Ponderossa Prawn Farm was considered as both a potential placement site and a possible adjacent sensitive receptor in the scoping and options study for the revised project proposal and in the assessment of baseline conditions and environmental values and impact assessments in the Revised Draft EIS

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	SEE FIGURE IN SUBMISSION								
General Comments	Terms of Reference may be invalid as we missed the opportunity to comment on Draft Terms of Reference with the movement of the project from East Trinity to the Barron River Delta.		X						OCG determined that the Terms of Reference for the Draft EIS did not need amendment or readvertising for the Revised Draft EIS. The original terms of reference did not prescribe East Trinity as the only potential land based placement area nor in any way preclude consideration of the Barron Delta.
General Comments	Resident of Holloways Beach for 20 years and manages a recreational fishing business from my address. Founder of CAREFISH (Cairns Recreational Fishing Industries Stakeholders) and sit on several committees, the Cairns LMAC, WTHWP (Wet Tropics Healthy Waterways Partnership) and the Reef 2050 LTSP RAC all as recreational fisher/tourism rep. This EIS is a very lengthy doc. I've been involved with the process since it was first announced and have been briefed multiple times by the proponent. I have discussed this project within the community and others and wish to make comment on this draft EIS phase. I note the submission time was by 5 pm, I've had a loss of Telstra phone line since Tuesday which was rectified today. Hopefully this submission will be considered.	X							Noted The related submission has been considered.
General Comments	General comments • In 2016, the Great Barrier Reef experienced its worst bleaching event on record. This was followed by another severe bleaching event in 2017. Two consecutive years of severe bleaching within the Great Barrier Reef has resulted in 50% shallow water coral loss. This has not been accounted for within the EIS. • Under current climate projections if we continue under a business as usual scenario the Great Barrier Reef is set to bleach annually by mid-century. • The annual Great Barrier Reef report card has identified much of the Reef as being in poor health and sediment and nutrient load as a major threat to reef health.		X						As identified in Chapter B5, Appendix AJ (Marine Water Quality), B7, Appendix AO (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching. Inshore reefs fringing Double Island are within the Zone of Impact, however impact will be negligible (i.e. water quality well within natural variability)

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
General Comments	There is very little information provided as to why corals within the impact zone will not be affected. Inshore corals are more resilient to turbidity, however different species have different tolerances and their tolerance will depend on their health and other stresses. Since December 2015, the Great Barrier Reef has been exposed to above average sea surface temperatures, due to the combined effects of climate change and a strong El Niño. The bleaching events in 2016 and 2017 have resulted in 50% coral shallow water coral loss within the Great Barrier Reef, with the majority occurring from Townsville upwards. ***SEE FIGURE IN SUBMISSION*** Increased sedimentation in the water column reduces the light available for coral cells to convert to energy, which reduces the ability of the coral to grow, reproduce and repair themselves4. Sediment that falls on the coral creates additional stress and corals will often divert valuable energy reserves into ridding themselves of the sediment using mucus layers and cilia action. Chronic stress in corals can lead to high incidences of bleaching, disease and death. A study released by the ARC Centre of Excellence for Coral Reef Studies and the Australian Institute of Marine Science, found that dredging near coral reefs doubles the frequency of disease in corals5. On top of an increase in disease, the study found there was a ninefold rise in other signs of compromised coral health, such as bleaching and death, when the corals become smothered in sediment. Thus, more detailed information is needed that assesses the health of coral within the dredging impact zone. Information on species type, their current health and other stresses in the area need to be assessed.		X						As identified in Chapter B5, Appendix AJ(Marine Water Quality), B7, Appendix AO (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching. Inshore reefs fringing Double Island are within the Zone of Impact, however impact will be negligible (i.e. water quality well within natural variability).

3.13 Cumulative Impacts

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Cumulative Impact	Cumulative Impact and Consequential Impact Assessments The Cumulative Impact and Consequential Impact Assessments and consideration of future resilience of the GBR (Chapter b18) rely on the 2013 GBR Strategic Assessment undertaken by GBRMPA and the 2015 GBR Report Card (data for 2014-15 year) to indicate status and trends of key habitats and water quality. As noted above, significant Reef-wide and local impacts have occurred since 2013, in particular the 2016 and 2017 mass coral bleaching events and various Category 3-5 cyclones. Thus, the assessments done in 2013 are out-of-date for key attributes of the Reef. It is disappointing that the revised draft EIS has not attempted to determine the updated condition of the sensitive marine receptors likely to be impacted and take into account these changed conditions. Until updated assessments are done (anticipated as part of the 2019 GBR Outlook Report) a very conservative approach focusing primarily on avoiding impacts needs to be taken in determining the likely consequences of both cumulative and consequential impacts.		X						As identified in Chapter B5 and Appendix AJ (Marine Water Quality), B7 and Appendix AO (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching. Inshore reefs fringing Double Island are within the Zone of influence, however impacts are not anticipated (i.e. water quality may be detectable but impacts to corals are not predicted). As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal marine ecological impacts beyond the channel and immediately adjacent areas. Water Quality will be closely monitored as per the Environmental Authority. Reactive Monitoring Programmes will be implemented under the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occur.
Cumulative Impact	Increased risks associated with increased shipping - invasive species, groundings, air quality in port		X						Cumulative impacts in relation to increased shipping numbers specifically on Invasive Species, Vessel Groundings and Air Quality are all dealt with in Chapter 18 – refer Table 18-7, section 18.4.2, Table 18-10, section 18.5.2

3.14 Climate Change

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Climate Change	Climate Change and Future Resilience Section B18.6.4 Climate Change and Future Resilience relies on the GBR Outlook Report 2014 for climate change forecasts for the Reef. These are now significantly out-of-date and the situation is now much bleaker as evidenced by the 2016 and 2017 mass coral bleaching events. The most update analyses include a recent report from the World Heritage Centre8 and Hughes, T.P. et al (2017)		X						As identified in Chapter B5 and Appendix AJ (Marine Water Quality), B7 and Appendix AO (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching. Inshore reefs fringing Double Island are within the Zone of influence, however impacts are not anticipated (i.e. water quality may be detectable but impacts to corals are not predicted). Reactive Monitoring Programmes will be implemented under the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occur.

3.15 Heritage - Indigenous

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Heritage-Indigenous	The proposed dredging project is ultimately shifting the landscape from the dreaming stories we see and listen as traditional relative indigenous family of this part of the world. How can we watch your Government enforce these ideals as best practice? when the environment is fragile and subtle in this area. We have said in the best interests of all cultures on the country today , that only solar farms are the sustainable decisions for future power supply, the undermining threat of wind farms is definitive, considering the health of humanity not for the sacred health of Cape York Peninsula landscape. Landscape is spiritual dreaming scape, to indigenous peoples, so every grain of movement in dredging is there by our creator, and once you remove the landscape, not so easy to explain why you ruined the Great Barrier Reef , as if you imagine you can control all the waste which is never captured and will diminish the important tourism interest level. For the deeply intrinsic connection of the local Aboriginal people , and we have seen and heard stories from the Cairns Yidindji mob and all other coastal communities, who are impacted by this thinking.	X							Noted The Revised Draft EIS Chapter B13 section B13.5 outlines commitments to Cultural Heritage Management Plans to be developed with the relevant parties.
Heritage-Indigenous	Yet are your authorities hearing the local people? Resulting from thousands of millennia of traditional owners caretakers of the dreaming scape and landscape , to have preserved this environment for our generation , our responsibility is to speak for mother earth, at this time in human history, dredging the inlet is one of the most obscene decisions based upon desires for greed and wealth , from transport of humans via the ocean to the door of our city. To make this land a better and more equal place to enjoy, build the infrastructure which employs locals, and transports equivalent loads of people. Just not driving ships up to the front door of the city, because you have so much money to consider the idea, is without including the first Australians within the decision process.	X							Noted The Revised Draft EIS Chapter B13 section B13.5 outlines commitments to Cultural Heritage Management Plans to be developed with the relevant parties.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	My husband says NO, in the same way your Government has treated and controlled every life and infrastructure in Aboriginal communities and our lives for a very long while. We want to share the elders dreaming stories of the sacred coastal areas and special places of significance with our grandchildren generations,, how may we do this when without care its all being overdeveloped? and without care there is no quality anymore in the world heritage environment that our elders kept pristine for so long before this generation .								

3.16 Legislation and Approvals

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Legislation and Approvals	I write in concern for the current development projects impact upon the sensitive natural environment of biodiversity in the Cairns Port and relevant regulation applicable to a development of this significance. Reef Friends-Reef Kids respectfully make submission that the current review of the regime that regulates coastal shipping could directly or indirectly affect the application of Regional, State and Commonwealth legislation or policies.		X						This EIS will be considered by the Coordinator General under the State Development and Public Works Act and legislation in force at the time of lodgement.
Legislation and Approvals	There has recently been a review of coastal shipping for reform of the regulatory regime and we are concerned that whilst we await the governments decision from the consultation process and any relevant regulation reform the government may make decision or pass regulations that impact upon the compliance of a Cairns Port Development with legislation that protects the sensitive nature of the areas biodiversity and shipping use within this coastal zone.		X						This EIS will be considered by the Coordinator General under the State Development and Public Works Act and legislation in force at the time of lodgement.

3.17 Marine Sediment Quality

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Marine Sediment Quality	The revised ES EIS states the following on page ES-30 of 44 "Odour from anaerobic sediments from dredging is rarely more than a temporary problem. When first discharged it is initially anaerobic and may smell, but the smell is lost within a few days of its exposure to air." This suggests that dredged sediments will be exposed to air at times, rather than remain completely submerged as it claimed elsewhere in the EIS. This inconsistency is not clarified.		X						This statement refers only to the stiff non PASS clays to be placed at the Tingira Street DMPA.
Marine Sediment Quality	The revised EIS acknowledges that shipping will likely increase should this project proceed. Whilst the issue of the role of shipping in contaminating sediments was considered, there does not appear to have been assessment of the role increased shipping will play in resuspending sediments.		X						The Cairns shipping channel experiences over 10,000 vessel movements per year. The increased numbers of vessels incurred by the project is insignificant in terms of this potential impact and the projects widening and deepening of the channel is considerd to be a benefical impact in reducing resuspension due to vessel moevements.

3.18 Mitigation Strategies

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Mitigation Strategies	It is likely that Ports North has the ability because of its control of the land comprising the port area to institute its own controls without the need for any legislation or regulation. Given its failure to do so today any further consideration of the expansion of the port should proceed on the assumptions made by the consultant, namely that mitigation strategies will not be enforced but will only apply if forced upon shipping from another level of government.		X						Northern Sands DMPA tailwater discharge quality will be managed to comply with DEHP discharge standards listed in the Environmental Authority to be determined prior to dredging commencement. Dredging impact mitigation will be managed through the Reactive Monitoring Program; the proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. This monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group. It is expected that a condition relating to management of this issue will be provided by the OCG
Mitigation Strategies	Those of my neighbours who have spoken to about this and that have the same concerns I do and I all are in favour of a development of the port that supports and fosters the development of the economy of Cairns. All we are looking for is a reasonable and sensible response to the adverse impacts that will flow if no steps are taken to address what we all view as being the obvious result should there be increased cruise ship visitation in the absence of the implementation of the recommended mitigation strategies.	X							Appropriate mitigation strategies have been identified in the Revised Draft EIS and will be further developed in detailed Contractor EMPs and Environmetal Authority (ERA 16) approval conditions.

3.19 Need for the Project

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Need for the Project	Point 1. Need for the Project: In light of the recent coral bleaching events 2016 + 17, and most likely more to come, the question must be asked: will there be a strong future for cruise ships in Cairns?? This hasn't been included in the discussion. Bleaching is clearly a threat and has NOT been considered in the current mix, the ships aren't coming to look at Cairns! The GBR is the drawcard.		X						The cruise industry, are not currently experiencing any negative demand trends in relation to this issue. Based on consultation with the cruise companies this issue is not expected to significantly diminish demand for the "cruising experience".
Need for the Project	Not convinced the rewards warrant taking the risks associated with the project		X						Discussions with Navy confirmed that LHC ships would use the Cairns Port if the proposed dredging design was implemented; similarly discussions included projections for foreign Navy vessel usage.

3.20 Project Alternatives

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Project Alternatives	• Dredging for larger cruise ships is not necessary to access the benefits for the local area. • There is limited discussion and detail of alternatives considered. The option of an offshore berthing facility for both cruise ships and naval vessels is not considered, and yet overseas experience shows that this could be a viable alternative, which would alleviate the need for further capital dredging for Cairns Port. We recommend that this alternative to the current proposal is fully assessed. • Having smaller boats transporting passengers from large ships to the shore provides an alternative to dredging. It is a well-established practice used all over the world, which allows the local industry to capitalise on the potential benefits of larger cruise ships without jeopardising the environment on which the tourism industry depends. • It is most likely that smaller cruise ships will continue to dominate the Cairns market, many of which don't require the proposed dredging.		X						The recent Demand Study 2016 (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing. Alternative options are presented in Chapter A1 of the Revised Draft EIS. The offshore berthing facility suggestion is essentially the same as the Improved Tendering Alternatives discussed but with a permanent berthing structure in lieu of vessel anchorage. It has the same logistical and growth constraints that do not meet the needs of the project as the improved tendering alternatives presented. The offshore berthing structure would simply add construction and maintenance costs, construction impacts, long term visual amenity impact. Improved Tendering Alternatives are presented in Chapter A2 of the Revised Draft EIS The recent Demand Study (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing.
Project Alternatives	**Floating Pump Out Facility** We note that the preferred option for the pump out facility has yet to be determined. Minimising ecological impacts and risks of overflows at the pump out facility should be a priority in determining the preferred option in addition to the normal considerations of OHS and safe and stable operating conditions. It is not apparent what are the range of weather conditions under which the facility will operate. Given the nature of the operation it would be expected that the facility would cease operating when wind or wave conditions exceed safe operating levels.		X						A number of possible pump out mooring options are described in chapter A3 of the Revised Draft EIS and will be resolved in the detailed design and procurement phases of the project with minimisation of ecological impacts and spill avoidance as key considerations along with safety. Dredging activities will be undertaken in accordance with Port Procedures and Information for Shipping for Port of Cairns under the guidance of Maritime Safety Queensland. Safe operating conditions (including safe operating levels to prevent environmental incidents will also be determined in conjunction with Dredging contractor procurement process and identified in the Contractors Vessel Operations Management Plan.
Project Alternatives	Oversized cruise ships can already access Cairns through offshore passenger transfer at Yorkeys Knob.		X						The recent Demand Study (Appendix H) canvassed major Cruise companies in relation to advantages of Cairns Port berthing.

3.21 Vegetation-Marine.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Vegetation - Marine	The Zone of Influence coincides with known (as mapped in 2015) seagrass meadows and coral reefs (e.g. Cairns Harbour, Double Island). The Zone of Influence includes areas where detectable turbidity changes could occur. The revised draft EIS states that ecological effects are not expected based on known tolerances of sensitive receptors (B7-100). However, the tolerances are based on species in other areas and were done prior to the major bleaching events that occurred in 2016 and 2017. The impact thresholds adopted for seagrass within the EIS are based on tolerance data for 'established' seagrasses elsewhere in tropical Queensland and cannot be applied to seagrasses in the study area. Seagrasses in the Cairns harbour have had major declines and are currently in a poor state and highly vulnerable to further declines1. Due to a slower than expected recovery, it is believed that in order for seagrass to recover in the area more light may be required than similar seagrass communities in established meadows3. As TSS already exceeds Water Quality guidelines in the area any elevated turbidity in the area from dredging would further hamper the recovery of the species and could lead to mortality. Thus, thresholds of turbidity need to be assessed for Cairns specific seagrasses that considers their slow recovery and poor condition. Impact on seagrasses should be lifted from moderate to high.		X						As discussed in Chapters B4,B5 and B7 extensive testing and modelling of dredging impacts including 10% overflows, predicts minimal water quality impacts and hence biota impacts will be primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. The proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. This monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group. Chapter B7 (p59) noted that there is little information on the tolerance of new seagrass growth during periods of recovery. While it is thought that new seagrass regrowth (e.g. new shoots, seedlings) would be less resilient to reduced light levels, there is uncertainty as to what appropriate thresholds would be. In general, (i) new seedlings/shoots have a low energy store so are more dependent on photosynthesis and would be less resilient to periods of low light; and (ii) new seedlings and shoots would have high energy requirements in order to sustain the high rate of growth required to become established (Jarvis et al. 2014; pers. comm. M. Rasheed, 2014). As such, this assessment has conservatively assumed that even minor turbidity increases could potentially affect new seagrass growth in recovering areas, particularly in areas directly adjacent to the channel where turbidity generated by dredging will be greatest. On this basis, there is the possibility that impacts to recovering seagrass areas could occur, particularly those directly adjacent to the channel. Overall, given (i) the minor to moderate scale of predicted impacts; (ii) the current condition and extent of seagrasses; and (iii) the temporary nature of turbid plumes, water quality effects resulting from the project are unlikely to affect the longer-term recovery of seagrass (following large scale declines over the last few years in response to natural disturbance) at the broader Cairns harbour level. Nonetheless, seagrass monitoring will be critical to ensuring that no significant impacts will occur as listed under nominated mitigation measures.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Vegetation - Marine	A targeted marine megafauna survey was not deemed necessary for this revised draft EIS because the proposal does not involve direct loss of seagrass through dredging (B7-55). However, any increase in turbidity could have serious consequences for seagrasses present in the area, especially given that the next few years are believed to be critical to their recovery. Seagrass beds in the study area represent one of the only two major seagrass areas between Hinchinbrook Island and Cooktown and the EIS fails to assess how important these seagrasses are to species of the area. For example, the revised draft EIS states that "While dugongs can be common in Trinity Bay, it is thought (our emphasis) that current population numbers are low due to the reduction in the extent and condition of local seagrass meadows." Seagrass meadows within the GBRWHA are in serious decline and iconic animals like dugongs will be unable to recover without very strong management intervention to improve water quality and seagrass habitat7. Given this, it is very important to understand how dugongs utilise the study area and to determine the importance of local seagrass, especially given the losses that may occur from the proposed dredging. Assuming that they no longer use the area based on recent seagrass decline is not sufficient. It is also an out of date assumption given that seagrass recovery is beginning to occur in the area. There is no recent survey or reference used (post 2012). However, there is a high chance that there are now greater densities of dugongs foraging within the ports surrounds. Information on how species such as dugongs utilise the study area is needed. More information on the importance of seagrass beds, despite their degradation, is needed.		X						Chapter B7.2.7 states that In agreement with the relevant regulators, a targeted marine megafauna survey was not deemed necessary for this EIS on the basis that the proposal does not involve seabed reclamation or direct loss of seagrass, applicable mitigations measures are well understood, and that surveys will only provide a limited 'snapshot' for any given time. Further, any present surveys would likely grossly under-estimate typical population estimates and habitat utilisation for seagrass dependent species (e.g. dugongs, turtles), given the limited availability and poor condition of local seagrass communities at this time. While there is very limited data available describing the occurrence, habitat utilisation and populations of marine megafauna in the Cairns region, a conservative approach has been adopted, whereby it has been assumed that a species may occur: (i) if suitable habitat is available, and (ii) the area of concern is within its broader geographical range. The dredging contractors Environmental Management Plan will contain detailed megafauna monitoring and impact mitigation procedures. As identified in Chapter B5 (Marine Water Quality), B7 (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota. It is expected that a condition relating to management of this issue will be provided by the OCG
Vegetation - Marine	xxxxxxx have particular concern for the impact that changes to our coastal shipping regulations will have upon the special and sensitive variety of plant and animal life within the Cairns Shipping Development environmental impact assessment.		X						As discussed in Chapters B4,B5 and B7, extensive baseline monitoring and water quality modelling discussed in the Revised EIS have determined that water quality impacts in the Barron River and near shore waters from the project will be minimal and manageable; there will be no water quality impacts on the mid or outer BGR waters and biota. Water Quality will be closely monitored as per the Environmental Authority and RMP.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	We are concerned that an increase in coastal shipping operations will have a negative impact upon the variety of plant, animal and habitat health and cause degradation of important and desirable natural systems Vessels for deep sea cargo transport are damaging to coastal ecology especially reefs and wetlands. Especially constructed vessels with a shallow draft and non damaging 'plimsoll line ' equivalent (barge blueprint) could do the job non-threateningly. It is our moral duty to our planet and life on it to act ethically. The revised EIS acknowledges that shipping will likely increase should this project proceed. Whilst the issue of the role of shipping in contaminating sediments was considered, there does not appear to have been assessment of the role increased shipping will play in resuspending sediments, thereby altering baseline turbidity and sediment mobility. Given the export of sediments into the GBRMPA is likely, this issue requires further attention as to whether it will add to the stressors presently on the GBR.								The majority of the additional cruise ships attracted to Cairns are expected to be relatively new vessels, crewed by competent international crews, and subject to international maritime and environmental requirements including the North East Shipping Management Plan. The safe management of the additional number of cruise ship transits through the GBR is well within the existing capabilities of Marine Safety Queensland's Vessel Traffic Safety systems (including ReefVTS). The Queensland government has recently announced a new new Vessel Traffic Services – Decision Support Tool (VTS-DST) which will significantly improve Vessel tracking within the GBR and further minimise the potential for groundings and collisions.
Vegetation - Marine	Marine Ecology The Zone of Influence coincides with known (as mapped in 2015) seagrass meadows and coral reefs (e.g. Cairns Harbour, Double Island). The Zone of Influence includes areas where detectable turbidity changes could occur. The revised draft EIS states that ecological effects are not expected based on known tolerances of sensitive receptors (B7-100). However, the tolerances are based on species in other areas and were done prior to the major bleaching events that occurred in 2016 and 2017. The impact thresholds adopted for seagrass within the EIS are based on tolerance data for 'established' seagrasses elsewhere in tropical Queensland and cannot be applied to seagrasses in the study area. Seagrasses in the Cairns harbour have had major declines and are currently in a poor state and highly vulnerable to further declines.		X						As discussed in Chapters B4,B5 and B7 extensive testing and modelling of dredging impacts including 10% overflows, predicts minimal water quality impacts and hence biota impacts will be primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. The proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. This monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group. Chapter B7 (p59) noted that there is little information on the tolerance of new seagrass growth during periods of recovery. While it is thought that new seagrass regrowth (e.g. new shoots, seedlings) would be less resilient to reduced light levels, there is uncertainty as to what appropriate thresholds would be. In general, (i) new seedlings/shoots have a low energy store so are more dependent on photosynthesis and would be less resilient to periods of low light; and

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Due to a slower than expected recovery, it is believed that in order for seagrass to recover in the area more light may be required than similar seagrass communities in established meadows. As TSS already exceeds Water Quality guidelines in the area any elevated turbidity in the area from dredging would further hamper the recovery of the species and could lead to mortality. Thus, thresholds of turbidity need to be assessed for Cairns specific seagrasses that considers their slow recovery and poor condition. Impact on seagrasses should be lifted from moderate to high. Potential for arsenic enrichment of seagrass and bioaccumulation into turtles not considered. During the Gladstone Western basin Dredging Campaign large numbers of turtles died. Initial reporting falsely attributed this event to flood related losses of seagrass. Blood samples collected several months after rainfall from dying animals revealed high levels of metals in their blood including arsenic (Gaus, et al., 2012). The pathway of this accumulation of acute phase metals is likely via ingestion in their seagrass diet.								(ii) new seedlings and shoots would have high energy requirements in order to sustain the high rate of growth required to become established (Jarvis et al. 2014; pers. comm. M. Rasheed, 2014). As such, this assessment has conservatively assumed that even minor turbidity increases could potentially affect new seagrass growth in recovering areas, particularly in areas directly adjacent to the channel where turbidity generated by dredging will be greatest. On this basis, there is the possibility that impacts to recovering seagrass areas could occur, particularly those directly adjacent to the channel. Overall, given (i) the minor to moderate scale of predicted impacts; (ii) the current condition and extent of seagrasses; and (iii) the temporary nature of turbid plumes, water quality effects resulting from the project are unlikely to affect the longer-term recovery of seagrass (following large scale declines over the last few years in response to natural disturbance) at the broader Cairns harbour level. Nonetheless, seagrass monitoring will be critical to ensuring that no significant impacts will occur as listed under nominated mitigation measures. It is expected that a condition relating to management of this issue will be provided by the OCG
Vegetation - Marine	Seagrass impacts and valuation are not properly considered based on contemporary peer-reviewed scientific literature and EIS lacks sufficient mitigations for protection.		X						Seagrass baseline studies incorporate nmany years of monitoring by leading scientific research organistions that have concluded no impacts associated with maintenance dredging. Modelling, impact assessment and mitigation measures presented throughout the EIS are comprehensive and considered best practice.

3.22 Project Support

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Project Support	Company fully supports the project which will assist the company in investing in the region and creating 25 additional jobs for locals.	X							Noted
Project Support	We support the Cairns Shipping Development Project.	X							Noted
Project Support	CPD Inc. supports the current recommended proposal in the 2017 revised draft EIS to place spoil at Barron Delta sand mines with the following essential caveats:	X							Noted

3.23 Stakeholder and Community Engagement

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Stakeholder and Community Engagement	Stakeholder and community engagement activities has a bias towards environmental groups and the vested interest of an aboriginal corporation's business enterprise, particularly regarding the resistance to carry out a full study of the East Trinity Solution.		X						As noted in Appendix E (Stakeholder Engagement Report) Ports North has continued to engage with a range of stakeholders and community members during the preparation of the Revised Draft EIS for the CSD Project. This engagement has met and exceeded the requirements for stakeholder consultation outlined in both the Australian Government's Guidelines for an EIS and Queensland Government's EIS ToR in relation to public consultation (see Appendix 1). Targeted engagement activities have focused on people and groups who have the greatest potential to be impacted or benefit from the project including public sector, private sector and NGO stakeholders with an interest in the marine environment and economic development.

3.24 Waste

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Waste	Northern Sands DMPA - Existing contaminants in the Northern Sands DMPA Members of the community have raised concerns with our organisation about general and commercial waste presently dumped in the Northern Sands DMPA site, some of which is believed to be hazardous.		X						General waste is not dumped at Northern Sands; it is licensed to receive inert "Construction and Demolition" waste and Potential Acid Sulfate Soils in accordance with strict conditions and restrictions on accepted waste.

3.25 Water Quality

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Water Quality	Concerned about water quality in both the GBR and Barron River		X						Extensive baseline water quality and coastal processes monitoring and computer modelling indicates that there will be minimal short and long term impact on the water quality of Trinity Inlet, Barron River and near shore waters of the GBR. Water quality monitoring programs will be implemented for Trinity Inlet/Bay and the Barron River with their design and implementation overseen by an Expert Advisory Panel. It is expected that a condition relating to management of this issue will be provided by the OCG.
Water Quality	The cairns beaches are already unappealing to swim at as there is so much matter suspended in the water. We do not need more. Keep the beach side tourism intact please		X						Extensive baseline water quality and coastal processes monitoring and computer modelling indicates that there will be minimal short and long term impact on the water quality of Trinity Inlet, Barron River and near shore waters of the GBR. Water quality monitoring programs will be implemented for Trinity Inlet/Bay and the Barron River with their design and implementation overseen by an Expert Advisory Panel.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Water Quality	The water quality of Trinity Inlet is already poor and sensitive habitats like seagrass are taking a long time to recover. A massive dredging project, followed by increased annual maintenance dredging and disposal will stir up and resuspend sediment in the GBRWHA further exacerbating this problem.		X						On the basis of extensive baseline seagrass surveys, water quality and coastal processes monitoring and computer modelling, the EIS considers that there will be minimal short and long term impact on the water quality and biota of Trinity Inlet, Barron River and near shore waters of the GBR. Chapter B7 (p59) notes that: The dredge footprint does not presently support seagrass meadows. Approximately 9 ha of the dredge footprint overlaps with seabed areas that have previously supported seagrass and as such, these areas represent potential habitat for seagrass. Of the 9 ha of historic seagrass within the new channel footprint, 6 ha of this falls within the existing footprint, predominantly in areas affected by the widening. Seagrass in the dredge footprint is ephemeral Halodule uninervis, with periodic detections during times of favourable conditions with detections in the mid 2000′s and again most recently in 2016 (Ports North, pers. com). The seagrass previously recorded here was dominated by Halodule uninervis, and at times was also comprised of Cymodocea serrulata, similar to other seagrass beds previously mapped on the eastern side of the existing channel (York et al. 2016). The total area of potential seagrass habitat in the footprint is ~ 1% of the cumulative historical extent of seagrass meadows in the Cairns region and ~2% of the meadow extent mapped in 2015. Seagrass surveys will be undertaken before dredging works, in order to define where areas of active seagrass recovery (i.e. new shoots, seedlings) are located at the time of dredging works as well as to confirm any recovery of seagrass within the footprint or Zone of High Impact (although considered unlikely). Further, ongoing monitoring of seagrass condition at both established meadows and recovering areas will form a key component of the reactive monitoring program that will be undertaken during dredging. Notwithstanding the above, it is important to note that there is little information on the tolerance of new seagrass growth during periods of recovery. Overall, given (i) the minor to moderate scale of predicted impacts; (ii) the current condition and extent of seagrasses; and (iii) the temporary nature of turbid plumes, water quality effects resulting from the project are unlikely to affect the longer-term recovery of seagrass (following large scale declines over the last few years in response to natural disturbance) at the broader Cairns harbour level. Nonetheless, seagrass monitoring will be critical to ensuring that no significant impacts will occur. A seagrass monitoring program will be implemented for Trinity Inlet/Bay with its design and implementation overseen by an Expert Advisory Panel. It is expected that a condition relating to management of this issue will be provided by the OCG.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Water Quality	Northern Sands DMPA We note that, "Further detailed design and placement modelling" (Page A3-15 of 35) is required to determine final design and equipment for management of the discharge of the soft clay slurry into the Northern Sands DMPA. It is essential that the final design and implementation minimises any risk of overflows into the Barron River as this river system already suffers reduced water quality conditions because of long standing issues relating to adjacent land uses including agriculture and industry as well as the expanding urban footprint of Cairns City. The final water quality discharge standards should be sufficient to at least maintain existing water quality in the receiving environment (both the Barron River catchment and estuary are graded as "moderate" in the pilot regional report card of the Wet Tropics Healthy Waterways Partnership), and preferably improve the current situation. We note that the following residual risk has been identified, namely "Lateral migration of saline water away from the dredge placement area causing impacts on water quality in the upper unconfined aquifer" (Table A3-4) and that the risk is to be mitigated by the "development of a detailed monitoring and intervention strategy during detailed design and approval phase". This is essential and highlights the limitations of the draft revised EIS to provide adequate detail of key operational aspects of the project. The revised draft EIS (Chapter A3) states, "The water quality within the void is relatively fresh (historically 200 – 1000 µs/cm), pH is neutral and turbidity is between 20 and 70 NTU. Concentrations of metals/metalloids and hydrocarbons are low, however nutrients are elevated, in particular NOx (nitrite and nitrate)".		X						Once commercial negotiations are completed with Northern Sands, detailed design of the DMPA will commence which will inform remodelling of the placement modelling, including targeted tailwater discharge limits (to be approved by DEHP). In addition, remodelling of flooding and groundwater seepage will be undertaken. Nutrient levels in Lake Narelle reflect surrounding groundwater concentrations which are influenced by agricultural landuse. These waters seasonally migrate to the Barron River with no known influence on algal blooms in the river. Notwithstanding this, nutrients will be significantly diluted by dredged inflow waters prior to discharge of tailwaters into the Barron River where further dispersion and dilution will result in minimal risk of eutrophication. Reactive monitoring in Lake Narelle, including additional preconstruction baseline monitoring will be undertaken to assesswaatr quality discharge isseus prior to works commencing. The Contractors EMP will nominate mitigation measures in the event of tailwater nonconformances including treatment measures such as aeration and increased retention durations. Appendix AO includes content on the issues of status of nutrients and contaminants within the existing waste facility void, and through baseline studies conducted at the site on 26 July 2016, through water column profile (surface to bottom) sampling for a range of parameters (metals, hydrocarbons and nutrients) and also consideration of data provided by the site operator for period 2010-2016. ' This data confirms that the lake is presently freshwater, has some elevated nutrients, and a range of metal and hydrocarbons generally consistent with relevant water quality objectives. Additional preconstruction baseline monitoring will be undertaken to assess water quality discharge issues prior to works commencing. The DMP will nominate mitigation measures in the event of tail water criteria exceedances, including treatment measures such as aeration and increased retention durations. Hazardous waste is not dumped into Lake Narelle and the EIS has assessed the lake water quality and surrounding ground water quality It is expected that a condition relating to management of this issue will be provided by the OCG

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	However, we have been advised that historically the site has been used to dump a range of general and commercial waste some of which may have been hazardous. Thus, we recommend that the results of the water quality analysis are re-assessed in light of possible hazardous waste dumping and that further testing is undertaken to ensure that the existing void water does not pose an unacceptable risk.								
Water Quality	Environmental Management Strategies We endorse the proposal (Table A A3-5 ENVIRONMENTAL MANAGEMENT STRATEGIES) to, "Convene an Expert Advisory Panel or Management group to oversee the reactive monitoring program and review effectiveness of water quality and ecological trigger values and response plans". Membership of the panel should include relevant local experts and its deliberations should be made public. TABLE A3-5 ENVIRONMENTAL MANAGEMENT STRATEGIES lists 64 strategies / actions to mitigate identified residual risks from the CSD project. Many of these actions relate to monitoring of key environmental parameters such as seagrass and water quality. While we endorse these strategies, a well-designed ambient monitoring program of key environmental parameters should be implemented some 12 months prior to start-up of the project to provide an adequate system understanding to inform any detailed management strategies that may be needed as a result of the project, both during its inception and delivery as well as completion. Given the ecological and social importance of Trinity Inlet and adjacent inshore marine areas, a well-designed, long term ambient ecosystem health coastal and marine monitoring program should be implemented.	X							Noted

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Water Quality	Our aquaculture facility relies on clean water from same tidal system as DMPA tailwater discharge - we have multiple concerns. Summary: Cairns Fresh Seafood owns an aquaculture facility (Locally known as Ponderosa Prawn Farm) just to the North of the proposed Dredge Material Placement Area. We support the project in principal and see it as a novel idea with merit. There are however likely significant impacts that the EIS has not identified, or considered low risk with regards to impacts on the Barron River Delta waterways and our Facility. Specifically with regards to water quality, bioaccumulation of toxins and potential impacts on our facility and the marine life of the estuarine system during our pond stocking period and just prior to the natural spawning period. We will highlight some (but not all due to the timeline involved) of the potential issues below and also provide a summary of a proposed solution that would dramatically increase the quality of the water discharged (by orders of magnitude). It would have the added benefit of allowing the lowering the water level in the lake and reducing head pressure on the groundwater table, hence creating significantly lower flow into groundwater and greatly reduce the chance of environmental harm to the river, our facility and surrounding cane lands.						X		A water quality monitoring programs will be implemented for the Barron River with its design and implementation overseen by an Expert Advisory Panel. Access to the whole Northern Sands Void for placement of dredge materials will significantly reduce the extent of saline seepage through reduction of head pressure on the aquifer (to be confirmed by modelling). In addition this is expected to result in improved tailwater quality through extended treatment capacity (retention duration). The key issue of receiving water quality will be a key matter for DEHP approval of the Environmental Authority (ERA 16) prior to project implementation.
Water Quality	POTENTIAL ISSUES Failure of EIS to identify Ponderosa Prawn Farm (Cairns Fresh Seafoods Aquaculture venture) as a sensitive target for tailwater discharge and leakage despite its proximity to the DMPA and recent histories of significant environmental harm of dredging processes to marine life and seagrass beds (Gladstone and other). This case in particular with the elevated levels of many metalloids in the dredging soil and waterways above recommended guidelines. Of further concern and not addressed in the EIS in any way is the large amounts of Scientific literature showing harm to aquaculture species far below the guidelines adopted for “safe discharge” in this project (e.g. Aluminium, Arsenic, copper, etc.)						X		As identified in Chapter B5 (p8) Table B5-2 provides a summary of the relevant environmental values (EVs) as presented in the EPP Water Schedule 1 of Trinity Inlet and Trinity Bay, including Aquaculture. The WQOs and guidelines defined by the documents in Section 1.1 are in turn provided in B5-2. The EVs and water quality objectives and guidelines presented are used to assist in the evaluation of existing (baseline) water quality conditions of Trinity Inlet and Trinity Bay and as an indication of the potential impact from the project. With reference to the WQOs and guidelines summarised in Table B5-3 and as noted in Section B5.2.2.b, the EPP Water objectives provide the quantitative measure of performance for the EVs where applicable followed by the WQGGBRMP (2010) and the ANZECC/ARMCANZ (2000) in order of precedence. Compliance with the most generally stringent aquatic ecosystem values will ensure achievement of all EV outcomes for Trinity Inlet and Trinity Bay, including Aquaculture.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									A water quality monitoring programs will be implemented for Trinity Inlet/Bay and the Barron River with its design and implementation overseen by an Expert Advisory Panel. The key issue of receiving water quality and tailwater discharge limits will be a key matter for DEHP approval of the Environmental Authority (ERA 16) prior to project implementation.
Water Quality	Failure to identify the possibility of secondary disease outbreaks spreading beyond the impact zone of water quality impacts via disease transmission and movement of fish and prawns. This can start as a point source and soon spread through the entire area.		X						Potential for disease outbreaks a result of water quality stressors is considered to be minimal given the predicted minimal water quality impacts, proposed reactive monitoring programs and short term nature (12 weeks) of the project.
Water Quality	There is also risk of scouring along the pipeline particularly during spring tides. The potential impact of this on the water quality in Richters Creek, and the adjacent Cairns Fresh Aquaculture enterprise appears not to have been well assessed, and no mitigations haves been proposed to minimise these impacts.		X				X		Such issues will be addressed during pre construction planning, with mitigation measures developed in consultation with the Dedge Contractor and DEHP and stipulated in the Construction Management Plan and Environmental Authority (ERA 16- Dredging)
Water Quality	Water quality performance targets are alluded to at Page C2-26 of 66 in relation to permissible amounts of overflow water during dredging. It is unclear if these are the TV's derived from ANZECC (2000) or other targets.		X				X		Refer Chapter B5 Marine Water Quality (section B5.2.2) for Water Quality Guidelines Lake Narelle has a neutral pH which will increase with the input of seawater preventing metal mobilization that could be associated with lake acidification issues. Tailwater discharge performance limits are based on DEHP approved limits on recent dredging projects in Queensland (Sunshine Coast Airport, Townsville Port Expansion) The key issue of receiving water quality and tailwater discharge limits will be a key matter for DEHP approval of the Environmental Authority (ERA 16) prior to project implementation.
Water Quality	No data is presented on what level of arsenic will be mobilised when PASS materials are mixed with the low pH freshwater of Lake Narelle. This remains an area of significant uncertainty requiring further testing, modelling and justification before the assumed safety can be reasonably assured.		X				X		Discusion on applicable legislation, assessment approach, sediment quality, potential impacts and mitigation with respect to arsenic and its bioavailability and potential water quality impacts is presented throughout Chapter B4 Marine Sediment Quality and referenced appendices. It should also be noted that As analysis and assessment will be included

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	The potential mobility (desorption) of the Arsenic in the sediments can be impacted by the pH and alkalinity of the diluent water. Testing of the actual receiving waters and actual sediments would help inform more precise assessment of this risk.								in the Reactive Water Quality Monitoring Program- refer Appendix AJ (p73) The key issue of receiving water quality and tailwater discharge limits will be a key matter for DEHP approval of the Environmental Authority (ERA 16) prior to project implementation.
Water Quality	Impacts on Cairn Fresh Aquaculture enterprise productivity from elevated suspended sediment load not mitigated The revised project EIS suggested that there was likely to be increased turbidity in the vicinity of the water intake for Cairns Fresh Seafood. Whilst the revised EIS documents a high media turbidity in Richters Creek (B7-110 of 139), and therefore considers that the additional turbidity from tailwater will have a negligible impact overlooks the way in which Cairns Fresh Aquaculture sources its water from this system. Cairns Fresh Aquaculture does not pump in water 24/7 365 days of the year. The facility is able to draw in lower turbidity water by timing its operations around tide and rainfall. The addition of tailwater driven turbidity continuously over ~12 weeks will effectively remove these low turbidity opportunities from Cairns Fresh Aquaculture to access higher quality, lower turbidity water to support its farming operation. It is unclear why the authors suggest little of this water enters the Richters Creek system given it can have significant outflows during a spring tide. Further given that the salinity increase is highest here, it also suggests significant risks for carriage of tailwater contaminants to this same location at highest level above ambient.		X				X		Hydrodynamic modelling shows turbidity and salinity increases are predicted to be minimal, particularly from the preferred Discharge Location B. Mitigation measures are presented throughout the EIS. It is also erronoenous to imply 24 hour 7 day per week discharge over the 12 weeks of dredging. The pond will take the firsty 2-3 weeks to fill to draw off level and there is additional bund height proposed which will provide holding capacity during the 9-10 weeks of discharge during dredging. Dredging cycles include steaming and dredging times of approximately 2 hours out of each 4-5 hours when no pumping into the pond will occur and hence tailwater discharge is controllable. The basis of water flow statements in the EIS is clearly presented in Chapter B5 Marine Water Quality. The Cairns Fresh Aquaculture facilities were considered as a sensitive receptor in the baseline studies and options analysis leading to the selection of the barron delta placement site and their location is clear on the water quality model plots throughout section B5.3.4.c
Water Quality	As a business that produces fragile marine species (fish and crustaceans) we are particularly susceptible to minor fluctuations in water quality and stand to be greatly affected by the dredging project as the proposal currently stands.		X				X		The following responses are provided for the balance of Water Quality submissions which have been summarized under the following recurring key technical themes. It is noted that the key issue of receiving water quality will be a key matter for DEHP approval of the Environmental Authority (ERA 16) prior to project implementation and that a water quality monitoring program will be implemented for the Barron River with its design and implementation overseen by an Expert Advisory Panel.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	In particular with reference to the large amount of potentially contaminated tailwater that will be discharged or leached into the Barron and Thomatis Creek tidal system close to our intake. Even with settlement, fine suspended solids and dissolved contaminants will persist and leach into the river system for many months after the project is finished. We have evidenced our concerns with several scientific papers and 20 years' experience on this site dealing with contaminants similar to those in the dredging material stirred up in rainfall events. We are supportive of the project but feel there is strong evidence to suggest the current proposal will have significant effects not only on our business but the flora and fauna of the Barron river delta system and even wider reaching areas of Trinity Bay and the Great Barrier Reef. We propose a few simple added steps (water treatment)) to greatly reduce the potential hazards of the current proposal on the Barron River Delta system and beyond We have 17 years' experience with this water treatment system as have had to install it in our Nursery and several others to combat the fluctuations of contaminants in coastal estuarine systems.								Metals/Metaloid Analysis As per Section B4.2.2.b of the Marine Sediment Quality Chapter of the EIS, the screening level for arsenic was raised for Cairns by the regulator after intensive studies. The text from the EIS states that it is recognised that arsenic is naturally elevated in the Cairns region due to the presence of natural mineralisation in metamorphic rocks of catchments discharging to Trinity Inlet (NAGD 2009, Preda & Cox 2002, Munksgaard & Parry 2002). Arsenic has consistently exceeded the screening level at the 95% Upper Confidence Limit (95% UCL) in most dredge areas. Exceedances tended to be marginally over the 20 mg/kg screening level with a maximum 95% UCL of 31.8 mg/kg. Additional elutriate and dilute acid extraction (DAE) analyses were undertaken in past SAP processes to assess bioavailability of arsenic and potential impacts on water quality during dredging and dredged material placement. DAE analyses indicated a low level of bioavailability of arsenic with concentrations consistently below the 20 mg/kg screening level (maximum recorded DAE concentration was 12.9 mg/kg or 44% of total arsenic). Elutriate testing undertaken with a 1:4 ratio of sediment to seawater returned a maximum concentration of 71.9 µg/L, which exceeded the low-reliability ANZECC/ARMCANZ (2000) limits of 2.3 µg/L for As(III) and 4.5 µg/L for As(V). However, with allowable dilution of at least 100 times at the DMPA, arsenic concentrations were found to be acceptable and unconfined placement was permitted as an outcome of the 2009 review of Sediment Analysis Plan implementations to inform the 2010-2020 LTDSDMP. Given that arsenic analysis results demonstrated an overall low risk to water quality and benthic communities, an increase of the local screening level within the Cairns Port dredge management areas to 30 mg/kg was agreed and approved by the Determining Authority. Monitoring of metals will be included within the RMP and Tailwater discharge monitoing, as determined by the EAC or similar named committee.
Water Quality	Insufficient Treatment of tailwater discharge from Land DMPA causing likely unsafe release levels of (but not limited to) Arsenic, Mercury, Aluminium, Iron, Sulfides, suspended sediments, TBT (and more) into the Barron River Delta. Similarly the DMPA site borders Thomatis Creek and Barron River and will be holding water above groundwater level in a sand mine with highly permeable soils. This is likely (as admitted in the EIS) to leach contaminants into the groundwater and neighbouring rivers and Creek very close to our intake – estimated to be 25,000,000 L per day (B6-43 of revised EIS document).		X				X		
Water Quality	Also of concern are the complex interactions of pH, Dissolved oxygen (Biological and chemical oxygen demand) and the various toxic forms of above metalloids and chemicals. With regards to above,		X				X		ANZECC (2000) lists mercury, cadmium and nickel as metals that can potentially bioaccumulate in marine biota in marine waters, and as such, the 99% species protection guideline values were included in Table B5-3 in the EIS, with a footnote below the table to explain this. ANZECC (2000)

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	treatment with Lime after mobilization/reaction in low pH water does not remove the toxicity of some of these chemicals/metals – E.g. Aluminium forms highly toxic heavy molecular form immediately after mixing with Lime and can increase gill accumulation considerably (Teien et al 2005). If this is done in a separate settlement pond it will also not help the water leaching into the Barron. Of particular concern as the initial water is potentially acidic with very variable Dissolved oxygen levels (sometimes very high which could cause oxygenation of PASS. And sometimes very low which has other toxicity issues.								does not list guideline values for arsenic in marine waters due to lack of toxicity data for marine species, hence the reason why the recreational guideline value from ANZECC (2000) for arsenic was included in Table B5-3 in the EIS. Notwithstanding this, ANZECC guideline values are only used in the EIS to compare to baseline data as a general guide to the condition of water quality in the study area. The impact assessment used baseline water quality data as the benchmark against which risks from project activities were assessed. Furthermore, regulators typically do not use ANZECC (2000) guideline values to set limits for dredging as baseline conditions can often exceed ANZECC guideline values, and ANZECC is more applicable to long-term assessment of water quality, not relatively short-term dredging projects.
Water Quality	The proposed dredging timeline is also coincident with the clean water in the Barron River Delta (as evidenced by the EIS B5.1.2 and table B5-20 and our own findings). The river system normally recovers at this time of year and cleans up well. The turbidity levels in the river in June July August are typically very good NTU 5-10 and thus discharging at 60+ will have an effect of not letting river and seagrass beds recover after wet season. This is also the time we pump the good water and stock our ponds with small, fragile juvenile Prawns for the Christmas market. We normally wait several weeks after a flood event or heavy rain before filling and stocking ponds. Failure to do so has resulted in poor stock survival in the past. In fact I would go as far as to say – our crop success DEPENDS on us pumping good water with low levels of contaminants at this time of year.		X				X		**Metals/Metaloid Mobilisation** As discussed above in the PASS discussions (Section 1.4.1) oxidation and metal mobilisation risk is negligible as dredge material will be placed in an anaerobic environment under permanent groundwater; with the recent agreement to use the whole NS void for the DMPA, PASS dredge materials which are not self neutralizing will consolidate well below the PASS Management guideline of 1m below permanent groundwater. Analysis of Lake Narelle waters indicates a neutral pH which will increase further to seawater levels with introduction of the dredge material; therefore concerns in relation to metal mobilization as a result of acidic lake conditions are unfounded. Tailwater Dilution and Advection Water quality impact modelling using the key indicator parameters of turbidity and salinity clearly shows that tailwater discharges will cause minimal and short term impact to Thomatis/ Richters Creek water quality. As identified in Chapter B5(p 79): In terms of turbidity impacts, the discharge of tailwater is expected to result in only a zone of influence in the Barron River for both discharge options. There are no zones of low to moderate impact, or zones of high impact, predicted in the receiving waters. The difference between the two discharge options is minimal, with negligible impacts predicted for both options. In terms of salinity, the spatial extent of predicted salinity changes would be similar between the two discharge options.
Water Quality	Whilst there has been a move to temporally avoid the compounding effects of the wet season there are other significant seasonal issues that could impact the effects the dredging activity could have on the ecosystem and Ponderosa.		X				X		While tailwater discharge is predicted to increase salinity by about 1-3 ppt, this magnitude of increase is relatively minor in the upper reaches of the Barron River and Thomatis / Richters Creek (increases of approximately 7% - 25%), and almost imperceptible in the lower reaches of the Barron River.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
	Firstly winter represents another stress on aquatic organisms and many disease outbreaks coincide with low temperature (esp barramundi, Grouper and Cod). Adding stress by prolonged exposure to contaminants coinciding with potential low winter temperatures is likely to result in disease outbreaks (per sobs for 20 years and well known in the aquaculture industry)								Salinity changes further downstream are less pronounced as the ambient salinity is higher in the lower reaches of the Barron River, while salinity changes further upstream are more pronounced (although still relatively minor) as ambient salinity is lower in the upper reaches of the Barron River. For this reason, the discharge location further downstream (i.e. Discharge Point B) would pose the least risk to the salinity regime in the upper reaches of the Barron River and Thomatis / Richters Creek. In summary, Discharge Point A poses the least risk in terms of turbidity impacts (due to the greater distance to the Barron River mouth) but greater risk in terms of upstream salinity impacts, while Discharge Point B poses a slightly higher risk in terms of turbidity but with a lower risk in terms of salinity. In this context, it should be recognised that the Barron River and Thomatis / Richters Creek are typically subjected to fluctuating salinity levels due to a strong tidal influence and the relatively minor salinity increases from tailwater discharges (from both discharge options) pose minimal risk to the salinity regime of these waterways, particularly considering the short-term duration of tailwater discharge (~10 weeks). Therefore, based on this assessment, the potential impacts to marine water quality from tailwater discharges from either of the discharge points (A or B) at the Northern Sands DMPA are expected to be short-term and minor. As a result Discharge point B is currently favoured and will form the basis of preconstruction planning and an application to DEHP for the ERA 16 (Dredging) Environmental Authority should the Coordinator General recommend that the project can proceed. Given that extensive testing of the capital dredge material identified compliance with NAGD and ANZECC guidelines and hydrodynamic modelling demonstrates that extensive dilution and advection of tailwater constituents, the project is expected to result in minimal impact on water quality in Thomatis/Richters Creek and the Ponderosa Prawn Farms. Ammonia As noted in Appendix AJ (p58) Table 2-10 indicates that ammonia pore water **concentrations** were elevated above the Batley and Simpson (2009) water quality trigger level of 0.46 mg/L at two out of three sample sites.
Water Quality	FURTHER EXPANSION The DMPA boundary is approximately 600m to the south of our hatchery and 1000m from the Farm intake pipes. The dredge tailwater will be pumped into the same tidal system that we rely on for our business. Additionally any leaching through the northern Thomatis creek and Western Barron River boundaries will leach directly into the water only a few hundred metres from our pump station.		X				X		
Water Quality	With regards to the Terms of Reference we are therefore asking for a review of water quality parameters at the Barron River discharge point to come into line of best practice and emerging scientific trends to protect the aquaculture venture, accumulation in the phytoplankton and zooplankton and possible effects on the upcoming survival and performance of the spawning season in the Barron River. Various concerns in relation to heavy metal concentrations in tailwater discharge and validity of water quality criteria		X				X		
Water Quality	Similarly the project will be just prior to the natural spawning season of many estuarine species. Effects on fragile larvae would be likely (but also hard to quantify) and potentially devastating to future populations. The concentrations of the chemicals and metalloids will be at the highest in the river system at the end of the project (August) and persist due to leaching through the Spring spawning season of many estuarine species. The river will not have had time to recover and natural algal and phytoplankton blooms (larval and juvenile fish/crustacean feed) will have high levels of contaminants due to bioaccumulation		X				X		

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Water Quality	Not convinced the rewards warrant taking the risks associated with the project concerned about water quality in both the GBR and Barron River		X				X		However, for sediment pore water, Batley and Simpson (2009) recommended a trigger value of 3.9 mg/L, which was derived from the 80th percentile of background data from Sydney Harbour. As the pore water ammonia concentrations are well below 3.9 mg/L, ammonia is considered to pose short-term negligible impacts, especially considering elutriate testing results. Elutriate testing designed to investigate desorption of contaminants from sediment particulates to waters, and to simulate release of contaminants from sediment typically during marine placement showed that results (Table 2-12 and Table 2-13) are well below the relevant water quality trigger levels (refer Appendix AJ, p59). Therefore, the mobilisation of contaminants poses short-term negligible impacts to marine water quality. Notwithstanding the negligible risk from contaminants in pore water, this risk is further reduced due to the expectation that these pore water concentrations would become rapidly diluted during the dredging process. It should also be noted that the proposed Reactive Water Quality Monitoring Program will include comprehensive tailwater contaminant assessment- refer Appendix AJ (p73).
Water Quality	The marine park tourism industry is vital for the Cairns economy. Employment can still thrive without new capital dredging in Trinity Inlet, which would further degrade the poor water quality around the Cairns region.		X				X		
Water Quality	Use of median ammonia concentrations is unable to predict risk of harm to aquatic biota from peak values. In marine pH levels, low levels of ammonia can cause toxicity to the gill of fish. The Revised EIS summarises ammonia data through use of median values. This is not an appropriate method to assess the data for its potential consequence to the ecosystem, as it will be the peak levels of ammonia which cause most toxicity, rather than the median. Monitoring for the project must include measures of assessment which allow dredging to be stopped if ammonia levels peak beyond those considered safe to aquatic ecosystems. (0.46mg/L)		X				X		
Water Quality	Mobilised sediment nutrients and risk of toxic algal blooms not assessed The Revised EIS notes that sediments are locally enriched with N and P. Dredging will mobilise these materials and resuspend them. Complete deposition of these compounds in the DMPA (where levels are already elevated) is unlikely with much of the N and P likely to be moved with the tailwater back into the Barron River. Such potent enrichment of water N and P levels are likely to drive production of dense algal blooms of potentially ichthyotoxic species. The risk of this does not appear to have been assessed, and it is unclear if monitoring programs will assess this factor and allow dredging to be ceased promptly should blooms be detected. In chapter B5 several references to the poor flushing capacity of Trinity Inlet are made. Such poor hydrological exchange will worsen eutrophication effects from the large tailings water inflows during the proposed project.		X				X		Nutrients are addressed in Chapter B5 and Appendix AJ The reference to Trinity Inlet flushing is not relevant to the proposed tailwater discharge location which was selected partly on account of its flushing characteristics.

4.0 RESPONSE TO MNES ISSUES RAISED IN EPBC SUBMISSIONS

4.1 Australian Maritime Conservation Society & World Wildlife Fund

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
Dredging	We acknowledge that the impacts of this proposal have decreased significantly in comparison to the previous scope of this dredging project, which involved 4 million cubic metres of seabed that would have been disposed of offshore. Consequently, the amount of maintenance dredging required has also been reduced. However, as the project relies on a level of self-cleaning of the channels it is unclear whether there will be a commensurate increase in background resuspension of sediments from self-cleaning channels which could negatively affect the ambient turbidity and water quality of the immediate areas. The water quality of Trinity Inlet is already poor and sensitive habitats like seagrass are taking a long time to recover. A massive dredging project, followed by increased annual maintenance dredging and disposal will stir up and resuspend sediment in the GBRWHA further exacerbating this problem.		X						Dredge plume modelling conducted for the Revised Draft EIS considered resuspension of sediments as a result of the reconfigured channel and concluded negligible cumulative impacts on water quality either as a result of capital or future maintenance dredging.
General Comments	In 2016, the Great Barrier Reef experienced its worst bleaching event on record. This was followed by another severe bleaching event in 2017. Two consecutive years of severe bleaching within the Great Barrier Reef has resulted in 50% shallow water coral loss. This has not been accounted for within the EIS.		X						As discussed in Chapters B4,B5 and B7, extensive baseline monitoring and water quality modelling have determined that water quality impacts in the Barron River and near shore waters of Trinity Bay from the project will be minimal and manageable; there will be no water quality impacts on the mid or outer GBR shallow waters and biota that have been subject of recent bleaching events. Water Quality will be closely monitored as per the Environmental Authority and RMP, as proposed to be overseen by the Expert Advisory Panel. Potential impacts of the project on corals of the GBR was a consideration and is accounted for in the respective Chapters and respective impact assesments.
General Comments	There is limited discussion and detail of alternatives considered. The option of an offshore berthing facility for both cruise ships and naval vessels is not considered, and yet overseas experience shows that this could be a viable alternative, which would alleviate the need for further capital dredging for Cairns Port. We recommend that this alternative to the current proposal is fully assessed.		X						The Revised Draft EIS did consider a number of project alternatives however none were considered feasible. The recent Demand Study (Appendix H) canvassed major cruise companies and identified major advantages of channel development to enable future cruise ship berthing at the Cairns Port.

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
General Comments	Having smaller boats transporting passengers from large ships to the shore provides an alternative to dredging. It is a well-established practice used all over the world, which allows the local industry to capitalise on the potential benefits of larger cruise ships without jeopardising the environment on which the tourism industry depends.		X						The Revised Draft EIS considered a number of project alternatives however none were considered feasible. The recent Demand Study RD EIS (Appendix H) canvassed major cruise companies and identified major advantages of channel development to enable future cruise ship berthing at the Cairns Port.
General Comments	It is most likely that smaller cruise ships will continue to dominate the Cairns market, many of which don't require the proposed dredging.		X						The recent Demand Study (Appendix H) canvassed major cruise companies and identified that 70% of the projected future cruise ship fleets planned for the GBR market would require the proposed channel reconfiguration to access preferred berthing at the Cairns Port as opposed to Yorkeys Knob offshore anchoring.
General Comments	In accordance with the Reef 2050 Plan, all proponents must demonstrate that the project is commercially viable. There are a lot of assumptions that Cairns would be a competitive home port, which is debatable. Additionally, the possibility of expansion of the naval base is untested. While cruise ships can bring some benefits to the local economy, these benefits tend to be constrained as so much of passengers' discretionary spending occurs on board. This is especially relevant with the increased need for large cruise ships to recoup costs lost through reduced ticket sale prices.		X						Economic benefit modelling conducted for the Revised Draft EIS by highly experienced consultants incorporated current local passenger expenditures and clearly identified the economic benefits of the CSDP project. Ports North discussions with Navy confirmed that LHD ships would use the Cairns Port if the proposed dredging design was implemented; similarly discussions included projections for foreign Navy vessel usage.
Marine Ecology	The impact thresholds adopted for seagrass within the EIS are based on tolerance data for 'established' seagrasses elsewhere in tropical Queensland and cannot be applied to seagrasses in the study area. Seagrasses in the Cairns harbour have had major declines and are currently in a poor state and highly vulnerable to further declines. Due to a slower than expected recovery, it is believed that in order for seagrass to recover in the area more light may be required than similar seagrass communities in established meadows. As TSS already exceeds Water Quality guidelines in the area any elevated turbidity in the area from dredging would further hamper the recovery of the species and could lead to mortality.		X						On the basis of extensive baseline seagrass surveys, water quality and coastal processes monitoring and computer modelling, the EIS considers that there will be minimal short and long term impact on the water quality and biota of Trinity Inlet, Barron River and near shore waters of the GBR. Chapter B7 (p59) noted that there is little information on the tolerance of new seagrass growth during periods of recovery. While it is thought that new seagrass regrowth (e.g. new shoots, seedlings) would be less resilient to reduced light levels, there is uncertainty as to what appropriate thresholds would be. In general, (i) new seedlings/shoots have a low energy store so are more dependent on photosynthesis and would be less resilient to periods of low light; and (ii) new seedlings and shoots would have high energy requirements in order to sustain the high rate of growth required to become established (Jarvis et al. 2014; pers. comm. M. Rasheed, 2014). As such, this assessment has conservatively assumed that even minor turbidity increases could potentially affect new seagrass growth in recovering areas, particularly in areas directly adjacent to the channel where turbidity generated by dredging will be greatest. On this basis, there is the possibility that impacts to recovering seagrass areas could occur, particularly those directly adjacent to the channel.

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
									Overall, given (i) the minor to moderate scale of predicted impacts; (ii) the current condition and extent of seagrasses; and (iii) the temporary nature of turbid plumes, water quality effects resulting from the project are unlikely to affect the longer-term recovery of seagrass (following large scale declines over the last few years in response to natural disturbance) at the broader Cairns harbour level. Nonetheless, seagrass monitoring will be critical to ensuring that no significant impacts will occur as listed under nominated mitigation measures. Ports North has had in place since 2013, a light monitoring program implemented by JCU TropWater to understand light requirements for seagrass meadows within turbid intertidal areas of Trinity Bay, in preparation for use of that data to define a locally derived PAR threshold for the EA conditions and the DMP and RMP. Data on light thresholds collected to dateis included within the Marine Ecolgy Chapter B4, along with technical review of JCU was included in Chapter B7.
Marine Ecology	Thus, more detailed information is needed that assesses the health of coral within the dredging impact zone. Information on species type, their current health and other stresses in the area need to be assessed. A targeted marine megafauna survey was not deemed necessary for this revised draft EIS because the proposal does not involve direct loss of seagrass through dredging (B7-55). However, any increase in turbidity could have serious consequences for seagrasses present in the area, especially given that the next few years are believed to be critical to their recovery. Information on how species such as dugongs utilise the study area is needed. More information on the importance of seagrass beds, despite their degradation, is needed.		X						As discussed in Chapters B4,B5 and B7, extensive baseline monitoring and water quality modelling discussed in the Revised EIS have determined that water quality impacts in the Barron River and near shore waters from the project will be minimal and manageable; there will be no water quality impacts on the mid or outer BGR waters and biota. Water Quality will be closely monitored as per the Environmental Authority and RMP, and overseen by an EAC. Corals do not occur in the Zones of Impact bith within the Zone of Influence where ecological impacts are not predicted to occur. Chapter B7 Section B7.2.7 noted that in agreement with the relevant regulators, a targeted marine megafauna survey was not deemed necessary for this EIS on the basis that the proposal does not involve seabed reclamation or direct loss of seagrass, applicable mitigations measures are well understood, and that surveys will only provide a limited 'snapshot' for any given time. Further, any present surveys would likely grossly under-estimate typical population estimates and habitat utilisation for seagrass dependent species (e.g. dugongs, turtles), given the limited availability and poor condition of local seagrass communities at this time. While there is very limited data available describing the occurrence, habitat utilisation and populations of marine megafauna in the Cairns region, a conservative approach has been adopted, whereby it has been assumed that a species may occur: (i) if suitable habitat is available, and (ii) the area of concern is within its broader geographical range. The dredging contractors Environmental Management Plan will contain detailed megafauna monitoring and impact mitigation procedures. As identified in Chapter B5 (Marine Water Quality), B7 (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota.

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
Dredging	It is noted that controlled overflows will occur during the operations of the Trailer Suction Hopper Dredge. Despite the assertion in the draft revised EIS that, "controlled overflow will not result in water quality outcomes that would result in unacceptable ecological impact", we recommend that controlled overflows are minimised to ensure any impacts are negligible.		X						Minimising overflow dredging per se does not necessarily minimise potential impacts. Reduced overflow dredging would incur additional dredge propulsion and drag head plume source generation, longer hours of dredging operation and additional pump water and tailwater volumes, As discussed in Chapters B4,B5 and B7 extensive testing and modelling of dredging impacts including overflows, predicts minimal water quality impacts and hence biota impacts will be primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. The proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. This monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group.
Floating Pump Out Facility	We note that the preferred option for the pump out facility has yet to be determined. Minimising ecological impacts and risks of overflows at the pump out facility should be a priority in determining he preferred option in addition to the normal considerations of OHS and safe and stable operating conditions. It is not apparent what are the range of weather conditions under which the facility will operate. Given the nature of the operation it would be expected that the facility would cease operating when wind or wave conditions exceed safe operating levels.		X						A number of possible pump out mooring options are described in Chapter A3 of the Revised Draft EIS and will be resolved in the detailed design and procurement phases of the project with minimisation of ecological impacts and spill avoidance as key considerations along with safety. Dredging activities will be undertaken in accordance with Port Procedures and Information for Shipping for Port of Cairns under the guidance of Marine Safety Queensland. Safe operating conditions (including safe operating levels to prevent environmental incidents will also be determined in conjunction with Dredge Captain and identified in the Contractors Vessel Operations Management Plan.
Northern Sands DMPA	The final water quality discharge standards should be sufficient to at least maintain existing water quality in the receiving environment (both the Barron River catchment and estuary are graded as "moderate" in the pilot regional report card of the Wet Tropics Healthy Waterways Partnership), and preferably improve the current situation.						X		As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal water quality impacts and hence biota impacts primarily restricted to the channel area. Water Quality will be closely monitored as per the Environmental Authority and RMP. The proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. Such issues will be addressed during pre construction planning, with mitigation measures developed in consultation with the Dredge Contractor and DEHP and stipulated in the Construction Management Plan and Environmental Authority (ERA 16- Dredging). The monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group.

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
Northern Sands DMPA	We have been advised that historically the site has been used to dump a range of general and commercial waste some of which may have been hazardous. Thus, we recommend that the results of the water quality analysis are re-assessed in light of possible hazardous waste dumping and that further testing is undertaken to ensure that the existing void water does not pose an unacceptable risk.		X						General waste is not dumped at Northern Sands; it is licensed to receive inert "Construction and Demolition" waste and Potential Acid Sulfate Soils in accordance with strict conditions and restrictions on accepted waste. Lake Narelle is regularly monitored by Northern Sands against existing Environmental Authority approval conditions and will be regularly monitored during the dredge material placement period in accordance with the project EA (ERA16).
Air Quality	In that instance the revised draft EIS states that cruise operators will be 'encouraged' to employ scrubbing technologies and other best practices to mitigate known harms. This needs to be a mandatory rule for all cruise ships entering the Port of Cairns and ensure they all meet the 2020 low sulphur requirements.		X						It is noted that administration of air quality in Queensland (via the Environmental Protection Policy -Air) is a Department of Environment and Heritage Protection function and is complaint driven; in the event of a complaint DEHP will require a technical investigation of the incident and implementation of necessary mitigation measures to enable compliance with the EPP. Ports North propose to conduct a baseline air quality assessment(including cruise shipping at berth) and rerun the Air Quality Dispersion Model, including review and revision of construction and operation phase assumptions used in the Revised EIS Air Quality Impact Assessment (Appendix AX) and testing of mitigation measures. The enforcement of 2020 IMO air quality standards will be a DEHP responsibility (through adoption of the National Environmental Protection Measures- Air) however Ports North will also conduct periodic monitoring of air quality at sensitive receptors during the operation phase to validate the effectiveness of mitigation measures and will actively engage with cruise ship companies to ensure compliance with the IMP regulations. The Air Quality report (Appendix AX) notes that after 2020 the International Maritime Organisation (IMO) have mandated use of lower sulfur fuels and or air scrubbers which will reduce emissions from Cruise ships. Ports North is in regular dialogue with Cruise Companies and will continue to require use of current 'best practice' operations by ships when at dock in the Cairns Port. It is expected that a condition relating to management of this issue will be provided by the OCG.
Environmental Management Strategies	We endorse the proposal (Table A A3-5 ENVIRONMENTAL MANAGEMENT STRATEGIES) to, "Convene an Expert Advisory Panel or Management group to oversee the reactive monitoring program and review effectiveness of water quality and ecological trigger values and response plans". Page 6 of 8 Membership of the panel should include relevant local experts and its deliberations should be made public.	X							Noted

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
Environmental Management Strategies	TABLE A3-5 ENVIRONMENTAL MANAGEMENT STRATEGIES lists 64 strategies / actions to mitigate identified residual risks from the CSD project. Many of these actions relate to monitoring of key environmental parameters such as seagrass and water quality. While we endorse these strategies, a well-designed ambient monitoring program of key environmental parameters should be implemented some 12 months prior to start-up of the project to provide an adequate system understanding to inform any detailed management strategies that may be needed as a result of the project, both during its inception and delivery as well as completion. Given the ecological and social importance of Trinity Inlet and adjacent inshore marine areas, a well-designed, long term ambient ecosystem health coastal and marine monitoring program should be implemented.		X				X		Revised Draft EIS detailed baseline ambient monitoring programs which have provided 12 months water quality data for the Barron River and greater than 12 months for Trinity Inlet. This data will inform preparation of the Reactive Monitoring Program to be implemented during and after dredging. The proposed design of the RMP is benchmarked and generally consistent with guidance provided in Water Quality Review and Monitoring (SKM 2012) developed as part of the Great Barrier Reef Marine Park Authority's (GBRMPA) Strategic Assessment. This monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group. Detailed mitigation strategies will be addressed during pre construction planning, with mitigation measures developed in consultation with the Dredge Contractor and DEHP and stipulated in the Construction Management Plan and Environmental Authority (ERA 16- Dredging). The monitoring program is proposed to be overseen by an Expert Advisory Panel or similarly named management reference group.
Environmental Management Strategies	We note that the Dredge Management Plan (DMP) (Chapter c2) is essentially a framework document summarising proposed approaches including monitoring programs to limit the impacts of the project. The effectiveness of the DMP will be gauged on the adequacy of both reactive and ambient monitoring programs, the trigger values established and their application, and compliance with and reporting on the DMP's implementation. While the responsible agent for undertaking the various implementation strategies is identified, it is not apparent who will be oversighting the adequacy of implementation and the response made should any trigger values be met. We assume that this will be the project proponent, Ports North.		X			X			Ports North will be responsible for implementing actions (through the Dredging Contractor) arising out of the Reactive Monitoring Program with input from the independent Panel of Experts. It is expected that a condition relating to management of this issue will be provided by the OCG.
Cumulative Impact and Consequential Impact Assessments	The Cumulative Impact and Consequential Impact Assessments and consideration of future resilience of the GBR (Chapter b18) rely on the 2013 GBR Strategic Assessment undertaken by GBRMPA and the 2015 GBR Report Card (data for 2014-15 year) to indicate status and trends of key habitats and water quality. Until updated assessments are done (anticipated as part of the 2019 GBR Outlook Report) a very conservative approach focussing primarily on avoiding impacts needs to be taken in determining the likely consequences of both cumulative and consequential impacts.	X							Noted As identified in Chapter B5 and Appendix AJ (Marine Water Quality), B7 and Appendix AO (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota and will not impact on mid and outer reefs impacted by bleaching. Inshore reefs fringing Double Island are within the Zone of influence, however impacts are not anticipated (i.e. water quality may be detectable but impacts to corals are not predicted). As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal marine ecological impacts beyond the channel and immediately adjacent areas. Water Quality will be closely monitored as per the Environmental Authority.

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
									Reactive Monitoring Programmes will be implemented under the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occur.
Economic Benefits and Expansion Business Case	- With or without the port expansion cruise ship visits to Cairns will continue. Cruise Lines International Association 2014 found that whether a cruise ship docks in a port or anchors off shore and transfers passengers by smaller boats to land actually makes little difference to the number of people disembarking and coming to explore the local area. Additionally, if ship size forces cruise lines to eliminate passenger tendering altogether, this would preclude calls to all but the largest ports—a dramatic change to the industry's prevailing business model. - It is unclear how many mega cruise ships will be part of Australasia/South Pacific market. Cruise lines' decisions to build new mega ships will continue to be a product of the long-term outlook in the North American and European passenger source markets, rather than the Australasian market. In 2016 two new vessels will be launched into the Australian market that can navigate Trinity Inlet, illustrating that the cruise ship industry in Australasia is continuing to operate a range of ship sizes. -Mega cruise ships can compete directly with land based tourism. Ticket prices are heavily discounted to ensure full capacity. These prices often don't cover the operational costs so ships must compensate by capturing more on-board revenue. Making Cairns a homeport for mega ships will be difficult for several reasons. First, due to the city's remoteness, small regional population and limited industrial infrastructure, Cairns is poorly suited to serve as a homeport for mega ships. The previous draft EIS even acknowledged this (Appendix D.6), which states that "Cairns and the region within driving distance of the port do not have a sufficient population base to sustain base porting, particularly for a large ship" (BMT WBM, 2014, p. 25).		X						The recent Demand Study (Appendix H) canvassed major cruise companies and identified that 70% of the projected future cruise ship fleets planned for the GBR market would require the proposed channel reconfiguration to access preferred berthing at the Cairns Port as opposed to Yorkeys Knob offshore anchoring. The recent Demand Study also identified major advantages of channel development to enable future cruise ship berthing at the Cairns Port and concluded that Cairns and surrounding areas have sufficient resources and attractions to allow viable home porting of cruise ships. Land based tourism opportunities are a significant marketing attraction in the selling of cruise itenaries and also provide another potential revenue component for cruise companies selling the land based tours. It is notedthat land based tourism benefits from the visiting cruise ships. P&O are currently homeporting the Pacific Eden at Cairns Port with seven homeport visits scheduled in 2018.

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
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	Second, growth in the Australian cruise destination market is currently being driven overwhelmingly by local residents rather than by international visitors. The Australian passenger source market is not currently large enough in absolute terms to support a large scale, permanent redeployment of existing mega-class ships to the region. 41% of current cruise ship passengers are from NSW. It would be difficult to see Cairns compete as a homeport against the likes of Sydney as people go on cruise ships to enjoy the cruising experience and would be unlikely to fly from Sydney to Cairns if they could board at home. Third, due to the monsoon season, tropical North Queensland may be less attractive as a homeport region for ocean cruising in the high-volume summer months.								
Economic Benefits and Expansion Business Case	Competition could take tourism revenue away from other areas of tourism in Cairns or other areas of Queensland.		X						The Revised Draft EIS concluded that the CSDP project would attract additional visitors to the region from Queensland, interstate and offshore markets.
Economic Benefits and Expansion Business Case	No clear evidence that the Naval base expansion within Cairns Port is wanted. Limited evidence is provided to justify additional dredging to allow for naval expansion in Trinity Inlet.		X						The Revised Draft EIS identified that discussions with Navy have confirmed that LHD ships would use the Cairns Port if the proposed dredging design was implemented; similarly discussions included projections for foreign Navy vessel usage.
Economic Benefits and Expansion Business Case	Economic benefits of the project: In Appendix D.9 of the original draft EIS, the proponent explicitly assumed an average of 1.5 nights in port for mega-ship passengers, which was an overestimation as mega ships are highly unlikely to spend this much time in port (current estimates of overnight stays are based on smaller ships). Hence estimates of passenger and crew spend based on these durations in excess of 12 hours are likely to be exaggerated. The revised draft EIS seems much more opaque regarding its assumptions. Estimated passenger days in port are reported without clear indication of ship passenger capacity, domestic/international passenger makeup (whose spend differs substantially - they've used a non-weighted 'average'), time actually spent in port, etc.		X						Economic benefit modelling conducted for the Revised Draft EIS by reputable consultants incorporated current survey derived local passenger expenditures and clearly identified the economic benefits of the CSDP project.

4.2 Cairns and Far North Environment Centre

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
Latham's Snipe	Reports from prominent local birdwatchers indicate that parts of the Tingira Street DMPA could be of international significance for the migratory shorebird, Latham′s Snipe (Gallinago hardwickii), and assert that further surveys need to be conducted to establish the potential of the site as essential habitat for Latham′s Snipe as per the Japan-Australia Migratory Bird Agreement. We refer you to the submission made by Birds Australia to the State Development EIS process for more information on the bird habitat present at the Tingira Street site.		X						The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. The Tingira St site was subject of environmental authorization process for the initial reclamation process, and the original permitted use, for continuation of use of the land through progressive continued development for port purose, has continued. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by progressive port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species in the overall context of adjacent comparable habitat. The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham′s Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however progressive development fr port purposes will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP (Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into timing of the works, and the Construction EMP in consultation with these agencies.
Dugongs	We support the WWF/AMCS submission to the State Development EIS process. In particular: "A targeted marine megafauna survey was not deemed necessary for this EIS because the proposal does not involve direct loss of seagrass through dredging (B7-55). However any increase in turbidity could have serious consequences for seagrasses present in the area, especially given that the next few years are believed to be critical to their recovery. Seagrass beds in the study area represent one of the only two major seagrass areas between Hinchinbrook Island and Cooktown and the EIS fails to assess how important these seagrasses are to species of the area. "For example, the EIS states that "While dugongs can be common in Trinity Bay, it is thought that current population numbers are low due to the reduction in the extent and condition of local seagrass meadows.		X			X			As discussed in Chapters B4,B5 and B7, extensive baseline monitoring and water quality modelling discussed in the Revised EIS have determined that water quality impacts in the Barron River and near shore waters from the project will be minimal and manageable; there will be no water quality impacts on the mid or outer BGR waters and biota. Water Quality will be closely monitored as per the Environmental Authority and RMP. Chapter B7 Section B7.2.7 noted that in agreement with the relevant regulators, a targeted marine megafauna survey was not deemed necessary for this EIS on the basis that the proposal does not involve seabed reclamation or direct loss of seagrass, applicable mitigations measures are well understood, and that surveys will only provide a limited 'snapshot' for any given time. Further, any present surveys would likely grossly under-estimate typical population estimates and habitat utilisation for seagrass dependent species (e.g. dugongs, turtles), given the limited availability and poor condition of local seagrass communities at this time. While there is very limited data available describing the occurrence, habitat utilisation and populations of marine megafauna in the Cairns region, a conservative approach has been adopted, whereby it has been assumed that a species may occur: (i) if suitable habitat is available, and

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
	Seagrass meadows within the GBRWHA are in serious decline and iconic animals like dugongs will be unable to recover without very strong management intervention to improve water quality and seagrass habitat. Given this, it is very important to understand how dugongs utilise the study area and to determine the importance of local seagrass, especially given the losses that may occur from the proposed dredging. Assuming that they no longer use the area based on recent seagrass decline is not sufficient. It is also an out of date assumption given that seagrass recovery is beginning to occur in the area. There is no recent survey or reference used (post 2012). However there is a high chance that there are now greater densities of dugongs foraging within the ports surrounds."								(ii) the area of concern is within its broader geographical range. The dredging contractors Environmental Management Plan will contain detailed megafauna monitoring and impact mitigation procedures. It is expected that a condition relating to management of this issue will be provided by the OCG
Other Concerns	We are concerned that there has not been evidence or examples provided to demonstrate the safety and effectiveness of this methodology being used to deal with dredge spoil containing PASS soils, particularly on the scale proposed. If it is indeed a new and unproven methodology, conducting it on the doorstep of the Great Barrier Reef where the stakes are high is not the place for experimentation. We have been advised that it is highly likely that the self-neutralizing components would be associated to the coarser sediments that sink and the acid-generating components associated with the finer sediments expected to settle on top of the pond. This surely would have implications on the self-neutralizing capacity of the material. It is concerning if this has not been accounted for in the EIS studies. Furthermore, the assumption that self-neutralising acid sulphate soils presents a low environmental risk, neglects the recognised related issues of deoxygenation impacts, iron plumes, altered soil nutrient leaching and elevated mobilisation of metal contaminants, impacts that can result from acid sulphate soils irrespective of the acidity impacts.		X				X		Transport of dredge materials (PASS and non-PASS) to shore based placement areas is routinely undertaken throughout Queensland using the proposed pumping technology. Placement of PASS in anoxic underwater environments is recognized as a suitable management strategy in the Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines (2014). Given that all PASS that is not self neutralizing is expected to consolidate to below at least 1 metre below the lowest dry season groundwater level, oxidation of PASS and hence metal mobilisation is considered to be highly unlikely and therefore additional monitoring and management is not required. Self-neutralising PASS material that is expected to consolidate and be above -1m below the lowest dry season groundwater level will be tested and treated consistent with the ASSMP and meet QASSIT Guidelines. Only non-PASS stiff clay will be placed at the Tingira Street DMPA; detailed sediment testing and mapping and dredge navigation and operator experience will enable exclusion of soft clay materials. In addition placed materials will be regularly inspected and tested (if necessary) in accordance with a detailed PASS management plan to be developed during pre-construction planning by the dredging contractor (within Contractors EMP). PASS management strategies will be agreed with the Department of Environment and Heritage Protection (DEHP) as part of the ERA 16 Environmental Authority approval. If survey confirmed the placement of Holocene sediments at the Tingira Street DMPA such materials will be characterised at a sampling frequency of not greater than 1 per 1000m3 to confirm the potential PASS risk. 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.

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
Economic Model	We are concerned that the economic benefits may be overstated due to the Input-output model used in the assessment. We expect the process reviewing the economic or business case for this project to consider the model used. If benefits are found to have been significantly overstated, government funding commitments should be withdrawn and the public given the chance to review and comment on the revised economic assessment. In short, we do not believe the rewards warrant the risks.		X						Economic benefit modelling conducted for the Revised Draft EIS by reputable consultants incorporated current survey derived local passenger expenditures and clearly identified the economic benefits of the CSDP project.

4.3 Joint Submission – Friesen, Walls, Valantine, Maurer, Hansen

ISSUE/REIS REFERENCE	COMMENT	ACTION							Ports North Response
		1	2	3	4	5	6	7	
Terrestrial Ecology	Tingira Street site is a well-known location amongst birdwatchers both locally and internationally. An impressive 111 species of bird have been recorded there including 22 migratory and resident shorebirds. It is a reliable site to observe certain species of difficult to find birds, such as Latham's Snipe (Gallinago hardwickii), Beach Stone-curlew (Esacus magnirstrus) and rare birds like Ruff (Philomachus pugnax). Tingira St contains two distinct habitats which both need careful consideration for their conservation value, cultural and community value, and aesthetics. One habitat is the salt marsh at Number 6 in the Figure 1. Numbers 1-5 are grassland areas of value. Numbered areas 5 and 6 in yellow are the areas currently proposed for dredge spoil dumping in the Draft EIS. Latham's snipe is a migratory shorebird listed under the Environment Protection and Biodiversity Conservation Act 1999 and the Japan-Australia Migratory Bird Agreement (www.austlii.edu.au/au/other/dfat/treaties/1981/6.htm). It is of great importance to preserve wetlands that may regularly support substantial numbers of Latham's Snipe. Little is known about its habits and population and further study is warranted. Further surveys need to be conducted to establish the potential of the site as essential habitat for Latham's Snipe as per the Japan-Australia Migratory Bird Agreement. Should the stiff clay dumping go ahead at this section of Tingira St, it is proposed that three areas be preserved and or rehabilitated (see Numbers 1 and 2 in red, Figure 1)The area in red closest to Trinity Inlet from the new wind turbine holding area (Number 1)The area in red adjacent to Chinaman Creek from the wind turbine area (Number 2)Rehabilitation of the wind turbine site with suitable grasses/sedges after its tenure is over.		X						The identified opportunistic wader staging and shorebird habitat areas are on previous reclaimed land designated as hardstand under the Cairns Port Land Use Plan and are destined for further civil works to facilitate this use. The Tingira St site was subject of environmental authorization process for the initial reclamation process, and the original permitted use, for continuation of use of the land through progressive continued development for port purose, has continued. Even if proposed filling areas could be preserved, it is likely that their habitat potential will be ultimately reduced by progressive port development, which would discourage its ongoing use by these species. Whilst the site may provide a convenient local bird viewing habitat, it is considered to be of limited significance to the survival of these species in the overall context of adjacent comparable habitat. The site may occasionally, but perhaps not regularly, support threshold numbers of the Snipe and therefore may not be a key habitat. A preliminary assessment of observational records (Atlas of Living Australia) show that extensive areas of suitable Latham's Snipe and local shorebird habitat exist in the Cairns area, particularly at the Cairns Esplanade. Suitable habitat is also likely to exist at East Trinity, Northern Beaches and Trinity Inlet. Potential habitat areas noted by submitters will be retained on site as much as possible, however progressive development for port purposes will inevitably diminish its habitat value. Notwithstanding an absence of identification of this issue by DEHP(Threatened Species unit) and DOEE, site planning and management strategies in relation to migratory birds will be incorporated into Contractors EMP and finalized DMP in consultation with these agencies. An assessmemt of the relatve value of the Tingira St site for the as Latham's Snipe (Gallinago hardwickii) will be provided in the Supplemementary Report

RESPONSE TO ISSUES RAISED IN "THE COMPANY ONE" SUBMISSION

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Marine Ecology and Marine Water Quality	Increased sediment load within Smiths Creek during capital dredging and ongoing maintenance dredging.		X						As identified in the submissions, and also in Chapter B5 and Appendix AJ (Marine Water Quality), B7 and Appendix AO (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota within the Zone of Influence The submitter's premises and intake are located outside the modelled zones of low to moderate deposition impact, and also in an area predicted to receive low TSS increase (in the order of 0-8 NTU change) which is well within the natural variation due to tidal induced turbidity change for that portion of Smiths Creek. Duration of works is proposed for <6 weeks within the inner port, and influence of turbidity is likely for only a portion of the incoming tidal cycle. Forecast maintenance dredging requirements are estimated to be in the order of 1-6% of existing volumes, and mainly from the outer channel, hence the impact of future maintenance on inner port volumes and resultant water quality including turbidity in the vicinity of the submitters intake, is considered to be within the range of annual natural variability. As noted by the submitter, determination of location of monitoring and or deployment of equipment within the Smiths Creek Trinity Inlet bifurcation for the duration of the Reactive Monitoring Programme will be a consideration for the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occurs.
Marine Ecology and Marine Water Quality	Suspension of and dissolution of benthic contaminants		X						Existing water quality within Smiths Creek and Trinity Inlet was a consideration within the baseline information presented in both the EIS and the RD-EIS for a range of parameters, including those outlined by the submitter. Chapter B5 and Appendix AJ (Marine Water Quality), B7 and Appendix AO (Marine Ecology), document the process by which the proponent has considered these baseline conditions, and then how these have been dealt with in the modelling of potential project impacts.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									The project will have negligible impact on inshore marine habitats and biota within the Zone of influence, and impacts are not anticipated, in respect of sediment deposition and turbidity effects, and hence the associated fine sediments and benthic contaminants are similarly likely to be low. As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal marine ecological impacts beyond the channel and immediately adjacent areas, including Smiths Creek. Water Quality will be closely monitored as per the Reactive Monitoring Programme of the Dredge Management Plan, as required by the Environmental Authority ERA 16 conditions. Issues of water quality (and potential point source uptake locations such as that operated by the submitter, will be a consideration for implementation of appropriate monitoring, and potential mitigation measures (for example inclusion of silt curtain barriers, alternate intake supply for duration of inner port dredging, notification to sensitive water users of timing of works) As noted by the submitter, determination of location of monitoring and or deployment of equipment within the Smiths Creek Trinity Inlet bifurcation for the duration of the Reactive Monitoring Programme will be a consideration for the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occur.
Cumulative Impact	Concern raised in regard to Consequential Impact Assessment and consideration of future resilience of Trinity Inlet due to sediment load		**X**						As identified in Chapter B5 and Appendix AJ (Marine Water Quality), B7 and Appendix AO (Marine Ecology), the project will have negligible impact on inshore marine habitats and biota within the Zone of influence. As discussed in Chapters B4,B5 and B7 extensive testing and modelling predicts minimal marine ecological impacts beyond the channel and immediately adjacent areas, including Smiths Creek. Water Quality will be closely monitored as per the Reactive Monitoring Programme of the Dredge Management Plan, as required by the Environmental Authority ERA 16 conditions. Issues of water quality (and potential point source

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									uptake locations such as that operated by the submitter, will be a consideration for implementation of appropriate monitoring, and potential mitigation measures (for example, timing of works relative to incoming tide, inclusion of silt curtain barriers, alternate intake supply for duration of inner port dredging, notification to sensitive water users of timing of works). As noted by the submitter, determination of location of monitoring and or deployment of equipment within the Smiths Creek Trinity Inlet bifurcation for the duration of the Reactive Monitoring Programme will be a consideration for the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occur.
Acid Sulfate Soil	Run off, leachate, PASS and sediment from Tingira Street landfill.		**X**						Only non-PASS stiff clay will be placed at the Tingira Street DMPA, with minimal entrained free water, therefore a low probability of ingress of leachate. Detailed sediment testing and mapping will enable accurate dredge navigation, along with operator experience will enable exclusion of wet soft clay materials, and focus the dredging n stiff clays for placement at the proposed Tingira St DMPA. In addition placed materials will be regularly inspected and tested (if necessary) in accordance with a detailed PASS management plan to be developed during pre-construction planning by the dredging contractor (within Contractors EMP). PASS management measures are to be implemented for dredge spoil sufficient to control oxidation in the event that the stiff clays be mixed with PASS and become placed at Tingira St. The DMP explains how PASS materials will be separated from the stiff clays to avoid placement of PASS in locations, so as to avoid oxidation leading to legacy acid and metals mobilisation issues. The DMP includes proposed mitigations for management of any tailwater or groundwater created from dredged materials. If survey confirmed the placement of Holocene sediments at the Tingira Street DMPA such materials will be characterised at a sampling frequency of not greater than 1 per 1000m3 to confirm the potential PASS risk. 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.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									PASS management strategies will be outlined in the ASSMP and agreed with the Department of Environment and Heritage Protection (DEHP) as part of the ERA 16 Environmental Authority approval. An ASSMP is included within the Supplementary Report, and addresses the concerns in respect of management of PASS, or leachate at the proposed Tingira St DMPA. Movement of barges transporting material dredged from the inner port are to be sealed hoppers, with no distance during transport, and will travel at slow speeds (as per existing vessel speed restrictions of <6 knots no wash) within Smiths Creek past the submitters facility, and will function as per regular existing large barge movements within this portion of the inner port. Barge movements are unlikely to increase risk of the turbidity, PASS or leachate as inferred or stated by the submitter.
Vibration	Disturbance due to heavy haulage of sediment to Tingira Street. "Heavy vehicle use of the road results in easily detectable vibration in surrounding land, if plans were to change and trucks were used to transport this dredge fill by Tingira Street then we have concerns on the level of disturbance this will have on our grouper broodstock populations as vibrations are passed through the ground and into the broodstock tanks."	**X**							No additional actions are proposed. The project does not propose to truck material to or from the Tingira St DMPA past the submitter's premises. All movement of material is to be by tug and barge within Smiths Creek, and hence vibration impact to such a facility was not a relevant impact warranting assessment. In the event that project scope changes, engagement with stakeholders inclusive of the submitter would be conducted so as to ensure effective development and implementation of appropriate traffic management for the project.

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
Recommendations	"XXXX" considers that their risk profile is unique as they operate a finfish hatchery almost directly adjacent the proposed works, and that the project may impact businesses that directly utilize the affected water body.		X						As stated by the submitter, the business operates across a range of biological life history stages which may be more sensitive to contaminants than the NAGD levels, and therefore has concerns about the risks of a range of metals and organic and inorganic pollutants associated with dredge sediment. The submission content is noted and outlines that the submitter established, and continued to develop the business in that location, and has implemented monitoring and the necessary treatment measures to respond to the prevailing water quality parameters within Smiths Creek to protect its operation. Water Quality will be closely monitored as per the Reactive Monitoring Programme of the Dredge Management Plan, as required by the Environmental Authority ERA 16 conditions. Issues of water quality (and potential point source uptake locations such as that operated by the submitter, will be a consideration for implementation of appropriate monitoring, and potential mitigation measures (for example inclusion of silt curtain barriers, alternate intake supply for duration of inner port dredging, notification to sensitive water users of timing of works). As noted by the submitter, determination of a possible location for monitoring or deployment of equipment within the Smiths Creek Trinity Inlet bifurcation for the duration of the Reactive Monitoring Programme will be a consideration for the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occur. It is understood that the submitter accepts that it operates in a challenging waterbody impacted on historically and presently by various businesses and essential operational infrastructure and has invested appropriately to mitigate existing water related risks and that there are significant ongoing costs for the operation. The submitter has identified options to make improvements to water treatment to avoid the effects of dredging, inclusive of: - increasing land-based water storage in periods of high TSS - additional fine filtration to remove sub-micron SS, and;

CATEGORY	COMMUNITY COMMENT / SUGGESTED SOLUTIONS	ACTION							PORTS NORTH RESPONSE
		1	2	3	4	5	6	7	
									- possible installation of multiple photocatalytic oxidation equipment to treat persistent organic pollutants. It is noted that these options are amongst a range of possible mitigation options in the event that impacts from the project are detected by the Reactive Monitoring Programme, and will be a consideration for the direction of an Expert Advisory Panel to ensure mitigating actions can be taken before impact occur. The recommendation for an additional water monitoring site to be included at Smiths Creek to complement data from the CSDP-RD EIS sampled from Trinity Inlet sampling Site 4 in the main channel, will be a consideration for the Expert Advisory Panel.