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PORT OF BRISBANE
Dredging Environmental Management Plan
CAIRNS

SEPTEMBER 2026



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1 Introduction

The Port of Brisbane Pty Ltd (PBPL) has been contracted by Far North Queensland Ports Corporation Ltd (trading as Ports North) to undertake maintenance dredging at the Port of Cairns. These dredging works will be conducted by the PBPL's dredger, the *TSHD Brisbane*. Works are scheduled for up to 46 days total, with dredging occurring between 18 September to 3 November 2026. It is noted that final dates and timings are subject to change and will be confirmed by the marine operations manager.

This Environmental Management Plan (EMP) forms the operational control document for the *TSHD Brisbane* while undertaking the dredging works and is intended to ensure all site-specific environmental issues that are the responsibility of PBPL, under the contractual arrangements, are adequately addressed. Approval conditions (Appendix B), the Ports North Environmental Policy (Appendix E) and the operational controls detailed in the Ports North, Cairns Port Long Term Maintenance Dredging Management Plan (LTMDMP) (Appendix D), have been considered in the preparation of this EMP. Other vessels that will be part of dredging operations (PBPL contractor vessels) will be managed under their own documents.

The EMP also forms part of the PBPL Environmental Management System to ensure the environmental management practices on the *TSHD Brisbane*, are consistent with the PBPL's ISO 14001 accreditation. As such, consideration has also been given to the Environmental Aspects and Impacts (as defined under the PBPL Environmental Management Program) to ensure all impacting processes are addressed through clearly defined performance indicators.

The dredging schedule for the *TSHD Brisbane's* operations at all of the Queensland ports has been developed in accordance with PBPL and Ports North's contractual requirements; DTMR's *Maintenance Dredging Strategy for Great Barrier Reef World Heritage Area Ports* (November 2016); and the QPA *Procedure for scheduling and reporting the annual state-wide maintenance dredging program by TSHD Brisbane* (2016).

2 Description of Dredging Plant

The *TSHD Brisbane* is a twin-arm Trailer Suction Hopper Dredge (TSHD) commissioned in November 2000. The vessel is 84 m long with a displacement tonnage of approximately 3,500 tonnes. During operations, it has a crew of 13, operating in two shifts, 24 hours per day.

Dredging activity is determined by comparison of required or design depths of a site with pre-dredging hydrographic survey. Specialised vessels independent of the dredge undertake all survey work.

The hydrographic survey information is digitally uploaded to the *TSHD Brisbane*'s on-board computer system allowing the dredge master to display the depth information for a site with dredge target areas clearly highlighted.

The vessel can operate in either automatic, where onboard computers control vessel dredge systems, or manual mode for dredging operations. Further, the onboard computers assist the positioning of the vessel by displaying a differentially corrected GPS position of the vessel track against intended dredge areas. A Dredge Pipe Operator and Dredging Manager are present on the bridge during all operations regardless of dredging mode, and all vessel movements are directed by the Dredging Manager.

The vessel extracts material by lowering two suction heads (one on either side of the vessel) to the seafloor whilst steaming slowly (1-3 knots) ahead. Large pumps onboard then draw water through the heads entraining sediments from the seafloor in a similar fashion to a household vacuum cleaner, depositing a mixture of water and sediments into the vessel's central hopper.

The dredge heads are not fitted with any mechanical agitation equipment and rely solely on the suction head provided by the onboard pumps. Whilst the vessel has the ability to pump high-pressure water to the dredge head to agitate sediments, this is generally not required unless operating in compacted sands.

The concentration of sediments delivered to the hopper is dependent on a number of factors, such as sediment type and dredging conditions, but is generally in the order of 10-30% solids. That is, 70-90% of the material pumped to the hopper is water and must be discharged to achieve effective loading.

The *TSHD Brisbane* has been constructed with a central column weir to control water discharge. This weir consists of six rings stacked vertically. The position of the rings and hence the depth to which water in the hopper must be before overflowing to discharge, is controlled automatically by the draft of the vessel. This controls the residence time of the water in the hopper, providing maximum time for suspended material to settle and reducing discharge suspended sediment concentration.

Discharge from the weir is through the bottom of the vessel's hull below the keel on the centreline. As such, discharge of waters during dredging is 4-6 m below the water's surface, depositing sediments near the bed and reducing settlement time.

The effective capacity of the hopper is dependent upon the type of material being dredged. While the volume of the hopper is 2900 m^3, effective capacities range from 2100 m^3 for sands, to 2900 m^3 for fine silts.

This variation in effective hopper capacity is due to both the maximum load carrying capacity of the vessel and the differences in settling time for the material dredged. Material with a high silt content (<0.075 mm) takes a relatively long time to settle from suspension in the water. As the hopper residence time[1] is reduced, insufficient material settles in the hopper per cubic metre dredged to make the works economically viable.

Once the hopper has reached optimum capacity for the type of material being dredged, the vessel steams to the relocation site. The material may be bottom dumped (as is generally undertaken for placement at sea) by opening large valves in the floor of the hopper to allow the material to fall out through the hull.

Alternately, the material can be pumped out via a bow discharge pipe (generally used for onshore placement). A floating pipeline is connected to the bow coupling and material within the hopper agitated with high-pressure water jets to achieve the correct consistency for pumping. Material is then delivered via the pipeline to detention basins onshore. No onshore placement will occur in this campaign.

[1] Hopper residence time is the time taken for water pumped to the hopper to flow out the discharge weir. As the hopper fills with sediment the residence time, and hence the potential for settling of suspended sediment, decreases. A compensation point is reached as the load curve (a plot of sediment load Vs total dredging time) asymptotes. That is, the amount of material retained in the hopper per unit of dredging time decreases.

3 Location of Operations

The maintenance dredging works will be conducted within the Port of Cairns Inner and Outer channels. The location, dimensions and approved depths of these channels are shown on the approved ERA 16 plans (Appendix B). Campaign specific work instructions are issued by Ports North's Hydrographic Surveyor which gives effect to control over areas within the Channel that are to be subject to dredging or excluded from the annual campaign. Any requests to change the approved scope of works from Ports North, must be issued via email and approved and acknowledged by all parties prior to being completed.

The material will be disposed of within an approved dredged material placement area, as detailed in the Sea Dumping Permit for this project (Appendix B). The approved area is defined by a circular area of seventeen hundred (1700) metres diameter centred on GDA94 (degrees, minutes, seconds) geographic coordinates:

- Latitude 16 ^{O} 46' 33.52" South
- Longitude 145 ^{O} 49' 28.77"

East Being WGS84 geographic coordinates:

- Latitude -16.775978
- Longitude 145.824659

4 Description of Site

The Port of Cairns is the closest port to the Great Barrier Reef and is located on Trinity Inlet (refer to Figure 1). It is a small, multi-purpose regional port, which caters for a diverse range of industries including agriculture, mining, and tourism. Yearly cargo through the port totals approximately 1.13 million tonnes. Almost 90 percent of the trade is bulk cargoes, including petroleum, sugar, molasses, fertiliser, and LP gas. With regard to the cruise/tourism trade, it is the country's busiest cruise port, with over 200 international and domestic cruise ship visits each year, and Queensland's busiest commercial port with scheduled services each day to the Great Barrier Reef and islands off Cairns.

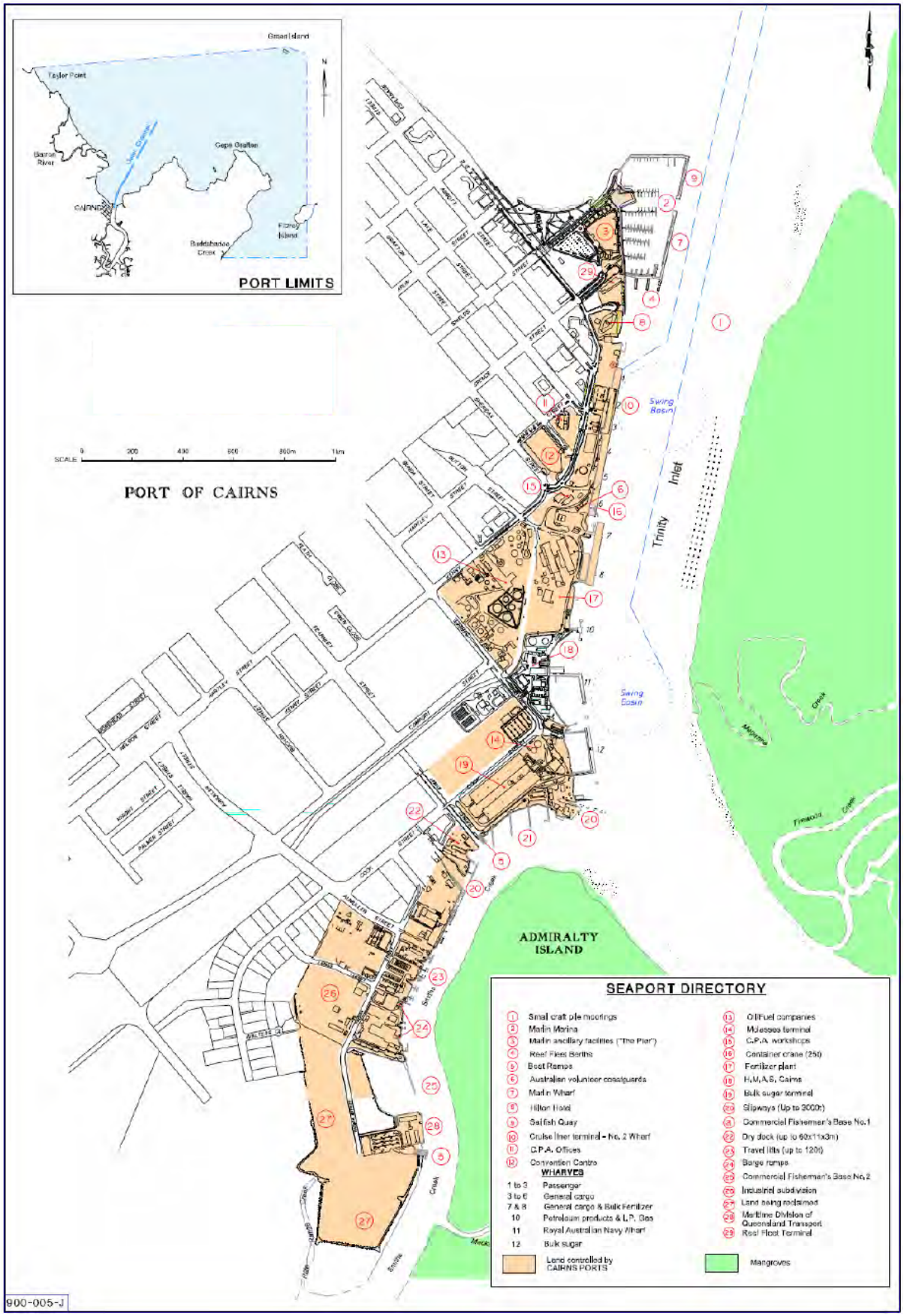


Figure 1: General details of the Port of Cairns

5 Description of Activity

The maintenance dredging works are scheduled for approximately 46 days. Works will be undertaken 24 hours per day, seven days per week, during the contract period, unless regulatory restrictions or operational constraints are imposed.

All dredged material will be disposed of to the approved dredged material placement area as per the conditions of the Sea Dumping Permit SD22/01 and Marine Park Permit G22/44236.1 attached in Appendix B.

In accordance with the requirements of the LTMDMP and Sea Dumping and Marine Parks Permits, material will be spread evenly over the disposal ground.

Table 1 provides an overview of the material type, source, and expected volume to be dredged during this maintenance dredging project.

Table 1: Type, Quantity, and Destination of Dredged Material for the 2026 Cairns Maintenance Dredging Project

Material Type	Source	Estimated Volume (m^3)	% Relocated Off-Shore	% Relocated On-Shore
Clay/Silt/sand	Inner and Outer Channel	No more than 730,000 m^3 (permitted maximum)	**100**	**0**
Total		**730,000**	**100**	**0**

6 Environmental Legislation and Approvals

6.1 State Legislation

6.1.1 Environmental Protection Act 1994

The objective of the *Environmental Protection Act 1994* is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends consistent with "ecologically sustainable development".

The protection of Queensland's environment is to be achieved by an integrated management program that is consistent with ecologically sustainable development.

The program is cyclical and involves the following phases –

- Establishing the state of the environment and defining environmental objectives;
- Developing effective environmental strategies;
- Implementing environmental strategies and integrating them into efficient resource management; and
- Ensuring accountability of environmental strategies.

Under the provisions of the *Environmental Protection Act 1994* Dredging (extractive and screening activities) is classified as an Environmentally Relevant Activity (ERA) and is required to be undertaken in accordance with an ERA 16 approval. Specifically the Act states:

"*Extractive and screening activities (the relevant activity) consists of any of the following-*

a) dredging of a total of 1000 t or more of material from the bed of naturally occurring surface waters, in a year;

b) *extracting, other than by dredging, material from a wild river area;*

c) *extracting, other than by dredging, a total of 5000 t or more of material, in a year, from an area other than a wild river area;*

d) *screening 5000t or more of material in a year.*

Ports North hold an ERA 16 approval for these maintenance works (EPPR00395813). Ports North and PBPL have a general responsibility under the Act to ensure that no environmental harm (serious or material) or environmental nuisance occurs as a result of its activities. This EMP has been prepared to encompass the components of the works to be undertaken by PBPL, to the extent to which it has control, and will be enacted by the PBPL staff as the working document.

PBPL is a Suitable Operator (No. 647472) registered by the Department of Environment and Science as being suitable to carry out the environmentally relevant activity (ERA). This is required under the *Environmental Protection Act 1994*.

6.1.2 Coastal Protection and Management Act 1995

The objective of the *Coastal Protection and Management Act 1995* (CPM Act) is to:

(a) provide for the protection, conservation, rehabilitation and management of the coast, including its resources and biological diversity; and

(b) have regard to the goal, core objectives and guiding principles of the National Strategy for Ecologically Sustainable Development in the use of the coastal zone; and

(c) provide, in conjunction with other legislation, a coordinated and integrated management and administrative framework for the ecologically sustainable development of the coastal zone; and

(d) encourage the enhancement of knowledge of coastal resources and the effect of human activities on the coastal zone."

The CPM Act requires that a person obtains a tidal works approval for work in, on or above land under tidal water, or land that will or may be under tidal water because of development on or near the land. A tidal works approval essentially approves the engineering design and location of structures (e.g. channels, swing basins, wharves etc). Prior to the CPMA tidal works approvals were referred to as approvals under *Section 86* of the *Harbours Act 1955*. These approvals were issued into perpetuity.

6.1.3 Fisheries Act 1994

The objectives of the *Fisheries Act 1994* include —

(a) ensuring fisheries resources are used in an ecologically sustainable way;

(b) achieving the optimum community, economic and other benefits obtainable from fisheries resources; and

(c) ensuring access to fisheries resources is fair.

Dredging works interact with this legislation if the works are within a declared Fish Habitat Area or require disturbance/removal of protected marine plants.

The proposed maintenance works will not be conducted within the boundary of a declared Fish Habitat Area and therefore do not require a Fish Habitat Area approval. It is however noted that the Trinity Inlet Fish Habitat Area and both General Use and Estuarine Conservation Zones of the State Marine Park are immediately adjacent to the maintenance works area.

Marine plants may be present within some sections of the maintenance dredging area. Ports North holds a current development approval which allows for the disturbance of marine plants (seagrass and mangroves) within the Inner Channel, Outer Channel and spoil disposal site (2006CA0478).

6.1.4 Marine Park Act 2004

Ports North has been issued with a joint State and GBRMPA authority permit (G22/44236.1) to protect the values of the Great Barrier Marine Park and Great Barrier Reef Coast Marine Park. The Great Barrier Reef Coast Marine Park partitions the marine parks into zones to manage different activities, separate potentially conflicting uses and maintain the parks unique biodiversity. This approval includes an appended plan which shows the approved work area within the State Coastal Marine Park, and enables activity consistent with past dredging campaigns in those areas.

6.2 Federal Legislation

6.2.1 Environment Protection (Sea Dumping) Act 1981

The *Environment Protection (Sea Dumping) Act 1981* is Commonwealth legislation providing for the protection of the environment by regulating dumping into the sea, incineration at sea, artificial reef placements, and for related purposes.

Ports North holds a Sea Dumping Approval which allows for the dredging and disposal of the maintenance dredge material at sea within an approved area (SD22-01).

6.2.2 Great Barrier Reef Marine Park Act 1975

The main objective of the Act is to provide for the long-term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region.

Under the provisions of the Great Barrier Reef Marine Park legislation approval is required for dredging, dumping of spoil and harbour works within the Amalgamated Great Barrier Reef Section of the Great Barrier Reef Marine Park. It should be noted that this area of the Marine Park is co-managed under both Great Barrier Reef and Queensland Marine Park legislation. As a result of this co-management a single approval for works is issued referencing both the State and Commonwealth Marine Park Legislation.

Ports North hold a Marine Parks Permit allowing for the dredging and disposal of the maintenance material within an approved area within the GBRMP (G22/44236.1).

6.3 Approvals

Ports North hold the following approvals for the 2026 maintenance dredging works:

- Environmental Authority EPPR00395813.
- Sea Dumping Permit SD22/01
- Marine Parks Permit G22/44236.1

Copies of all approvals are included in Appendix B of this EMP and will be onboard the dredge at all times.

PBPL will ensure that its dredging operations comply with those conditions of the above approvals for which it is responsible, in accordance with the dredging contractual arrangements. Ports North, as the proponent, is responsible for supplying all relevant information regarding the environmental approvals and associated conditions to the PBPL. Ports North have also reviewed and approved this EMP.

Note: the Sea Dumping and Marine Park approvals refer to the Cairns Port Long-Term Maintenance Dredging Management Plan (LMDMP) (a copy of this Management Plan is provided on Ports North's external website – accessible via the link in Appendix D). In particular, Section 9 of the LTMP identifies a range of management actions which are required to be implemented during dredging campaigns. Section 9 of the LTMP contains the minimum EMP specification for a TSHD and has been considered in the preparation of this EMP.

7 Roles and Responsibilities

The approvals for this maintenance dredging project and Cairns LTDMP include a range of conditions and requirements which must be complied with. Some of these conditions relate to operational activities while others relate to broader management issues, environmental monitoring and reporting. Contract negotiations between PBPL and Ports North have clarified responsibility for compliance with the various conditions.

Table 2 provides an outline of the roles and responsibilities of the staff involved in the Cairns maintenance dredging project. This also provides an outline of the Chain of Command and links between parties involved in the project.

Table 2: Roles and Responsibilities of Key Employees Associated with the 2021 Cairns Maintenance Dredging Project.

Position	Contact Numbers	Responsibility	Reporting to	Contact Numbers
PBPL Staff Onboard *TSHD Brisbane*				
Vessel Master	Vessel Master 0417 003 264 brisbane@portbris.com.au	Responsible for all aspects of vessel shipboard management	Head of Dredging Operations	Daniel Benevides daniel.benevides@portbris.com.au
Chief Engineer	Chief Engineer 0407 691 602	Responsible for operation and maintenance of onboard machinery	Vessel Master	Vessel Master 0417 003 264 brisbane@portbris.com.au
PBPL Staff On-Shore				
Site Representative	Brendan Elliot 0428 785 508	Management of day to day operations of project	Head of Dredging Operations	Daniel Benevides daniel.benevides@portbris.com.au
Head of Dredging Operations	Daniel Benevides daniel.benevides@portbris.com.au	Management of overall operations of dredger.	Executive General Manager Marine	Andy Perry 0427 714 626 andy.perry@portbris.com.au
Environmental Advisor	Michael Whitty 0458 009 227 michael.whitty@portbris.com.au	Responsible for undertaking monitoring of EMP implementation	Environment Manager	Michael Linde 0403 049 158 michael.linde@portbris.com.au
Executive General Manager Marine	Andy Perry 0427 714 626 andy.perry@portbris.com.au	Responsible for overall management of the Corporation's dredging activities	Chief Executive Officer	
Site Representative				
General Manager Operations	Ash Sinha 0408 365 555	Ports North Project Superintendent	Ports North management	
Surveyor	Rob Harris 4052 3885 0439 877 412 Rob.harris@portsnorth.com.au	Ports North contact for management of day to day operations of project	Ports North management and liaison with POBL Site Manager	
Senior Environment Advisor	Federico Pastorelli 0439 723 008	Contact for coordination and management of environmental incidents (i.e. fauna injuries, hazardous spills)	Ports North Management	
MSQ Contacts				
Regional Harbour Master	Captain David Ferguson Gary Walsh (Acting RHM) 07 4052 7400 rhmcairns@msq.qld.au	Contact for hazardous spills and shipping safety issues		

7.1 Communications

Any instruction that is outside the scope of the Conditions of Contract and/or this Environmental Management Plan must be submitted in writing to the Vessel Master, Site Representative, Head of Marine, and Ports North Senior Environmental Advisor.

No such works will be undertaken until such formal instruction is received from Ports North.

8 Environmental Management Plan

The purpose of the Environmental Management Plan (EMP) is to:

- Identify the potential hazards associated with undertaking the dredging and material relocation works;
- Identify the appropriate mitigation measures for each potential environmental hazard; and
- Indicate the corrective actions to be undertaken if an undesirable impact or unforeseen level of impact occurs.

It should be noted that PBPL is operating as a contractor for Ports North to undertake the dredging works. Ultimate responsibility for the project lies with Ports North and this EMP provides a description of only those components within the control of the PBPL. Other compliance monitoring and reporting issues are to be addressed by Ports North.

The sections below provide an outline of the structure and details of the component management plans.

8.1 Structure

Each of the Management Plans within this document follows the structure outlined in Table 3 below.

Table 3: Management plan structure and components

Item	Content
Element	Aspect that requires management.
Objective	What is intended to be achieved.
Actions	Tasks that will be undertaken to ensure Objective is met.
Performance Indicators	Qualitative or quantitative measurement to gauge objective.
Monitoring	Details of measurement of performance indicators.
Reporting	Nature, timing and responsibility for reporting results.
Corrective Action	Action to be taken if monitoring indicates objective is not being met.
Term	Active term of management plan.
Responsibility	Delegation/nomination of responsibilities for overseeing management plan operation.

8.2 Management Plans

The following elements have been identified as issues requiring specific management to avoid unacceptable environmental impacts, and management plans have been developed accordingly.

All compliance monitoring is to be conducted by Ports North.

Waste – The general categories of waste have been defined as follows:

- General garbage (refuse generated from crew);
- Comingled recycled waste including paper, plastics, metals and glass;
- Paper and cardboard waste;
- Sewage waste (including both black and grey waters); and
- Oily water, oil wastes and other hazardous or regulated wastes such as greases, paints and chemicals.

Emissions (Noise / Vibration / Light / Air Quality) – The generation of emissions during vessel operation and potential impacts on sensitive receptors forms the basis of this management plan. Please note that issues of workplace noise and vibration are controlled and managed under existing occupational health and safety protocols within the vessel's safety management system.

Turbidity – Whilst this management plan aims to limit the generation of plumes as much as practical, the principal management response will be to ensure that dredging operations are only undertaken within approved areas and the vessels turbidity control/minimisation features are fully operational. Water quality monitoring of the dredging works (if required) will be undertaken by Ports North in accordance with relevant approval conditions.

Protected Marine Fauna – This management plan addresses the potential for the *TSHD Brisbane* to directly impact on protected marine fauna during dredging (e.g. capture of marine turtles in dredge head), transit (collision) or material relocation operations. Overarching issues of secondary impacts such as habitat disturbance are beyond the scope of this document and would have been addressed in impact assessments associated with the original capital works approvals, or site-specific considerations by regulatory authorities when issuing necessary licenses/permits.

Cultural Heritage – PBPL has not been made aware of the presence of items of known cultural significance within or adjacent to the dredging or disposal area that requires protection from potential impacts from dredging. As such, this management plan is generally in the scope of maintaining a watch on dredge material for unanticipated items of cultural significance.

Ballast Water – The *TSHD Brisbane* has relatively small ballast water tanks which are only discharged in special circumstances (e.g. light draft required for shallow water (<3m) work). Ballast water will be managed in accordance with the Commonwealth's *Biosecurity Act 2015*. To further minimise the risk of translocation of exotic organisms, fresh water is used to fill the ballast tanks when possible.

Vessel Washdown – This management plan is applicable to areas were wash waters may flow directly overboard, such as the deck and dredge head.

Bunkering of Fuel – Refuelling the *TSHD Brisbane* occurs by vessel-to-shore connection. There is the potential for fuel spill/leaks to enter the waterways however this risk is controlled by operating procedures and use of licensed contractors to perform the fuel transfer.

8.3 Waste Management

8.3.1 General and Recycling Wastes

The *TSHD Brisbane* is fitted with one 3m^3 general waste bin, one 1.5m^3 paper waste bin, 4 x 240L comingled recycling bins and 2 x container green bags for the collection of on-board wastes. These are fitted with secured lids to prevent material being blown overboard during either storage or handling. An approved contractor collects the bins fortnightly when the vessel is alongside port reception facilities during re-provisioning/crew-change operations. Containers will either be kept on board or taken to an appropriate container recycling facility.

Further details are contained within the Waste Management Plan (section A20 of the *TSHD Brisbane* Operational and Administration Procedures Manual).

Element	Waste Management - General and Recycling Wastes
Objective/Target	To ensure that general refuse produced on-board the *TSHD Brisbane* is collected, retained and transferred to an appropriate facility without unintentional loss..
Actions	During at-sea operations: • Supply of appropriate collection bins in areas such as galley, crew quarters and mess. • Transfer of bins as required to large bins on-deck. • All on-deck bins secured in position to prevent movement whilst at sea. • Material placed in bin to be as compacted as possible to reduce space requirements. • Where facilities exist to recycle material, appropriate separation of refuse. • Bin lids to be chained down to prevent wind- blown material loss at all times. • All collection points to be emptied to on-deck bin when 75% capacity. • Visual check to ensure that on-deck bins have sufficient capacity to retain general waste until next scheduled on-shore transfer. During transfer: • Licensed collector to be used to collect general refuse for transfer to approved facility. • Bin lids to be chained in position during transfer to prevent material loss.
Performance Indicators	No loss of general refuse over-board during collection, storage, or transfer.
Monitoring	Regular visual assessment of collection points. Visual inspection of on-deck bins.
Reporting	Reporting of material loss over-board to Vessel Master and Ports North in accordance with incident reporting protocol detailed in Section 9 of this EMP.
Corrective Action	If practicable, retrieve material that was lost. Review procedure causing material loss and rectify immediately.
Term	During all operations.
Responsibility	Vessel Master.

8.3.2 Sewage Treatment

The *TSHD Brisbane* is fitted with a modular sewage treatment system, which treats all onboard blackwater and greywater. Although this system is IMO approved and designed to meet the requirements of the *Queensland Transport Operations (Marine Pollution) Regulation (2008)* for Grade A treated sewage. Current TSHD procedures consider all effluent produced by the system to be 'untreated' and is diverted to the holding tank. The *TSHD Brisbane* will not be discharging sewage to shore during Cains works. If sewage discharge is required, it will be conducted outside the nil discharge areas and in accordance with TOMPA (see Appendix A for map). Simply, no waste will be disposed of in Cairns Port limits.

Further sewerage treatment details are contained within the following documentation:

- Waste Management Plan (section A20 of the *TSHD Brisbane* Operational and Administration Procedures Manual) and AMSA waste logbook;
- Sewage Log Book (Includes effluent discharge locations, effluent discharge log, in-house sludge assessments and discharge log and independent effluent assessment); and
- Aquamar Bio-Unit type MSP I Sewage Treatment Plant - Complete Manual.

Element	Waste Management – Sewage Treatment
Objective/Target	To ensure sewage generated on-board is appropriately treated and releases are managed.
Actions	During at-sea operations: • All sewage effluent (including greywaters and blackwater) generated onboard shall be directed to the onboard treatment system. • Treated effluent shall be diverted to onboard holding tanks • Effluent from the treatment system and holding tank is to be discharged in appropriate locations to ensure compliance with relevant legislation (see Appendix A - Untreated sewage discharge- which includes a plan showing restricted locations for discharge of untreated sewerage for Cairns). • Sludge tank to be pumped out as required by Chief Engineer. Operation of the sewage treatment system is in accordance with the Waste Management Plan (section A20 of the TSHD Brisbane Operational and Administration Procedures Manual). Chief Engineer coordinates with Vessel Master as to when discharge occurs. • Pump-out of sludge tank to be managed as for untreated sewage discharges and, by way of appropriately licensed contractors where required. Service records: • The sewage treatment system is to be managed and maintained as described in the sewage treatment manual), operational procedures manual, sewage log book and MP2.
Performance Indicators	No sewage discharge within an area that prohibits the discharge of untreated sewerage. All sea valves are Lloyds certified, and inspected and overhauled, every during every out of water refit.
Monitoring	Vessel Master to monitor vessel location during sewerage discharge events to ensure vessel is not within an area that prohibits the discharge of untreated sewage.
Reporting	Reporting of sewerage discharge location in Sewage Log Book.
Corrective Action	Review procedure resulting in sewerage discharge in prohibited location and rectify immediately.
Term	During all operations.
Responsibility	Management and operation of on-board system is by the Vessel's Chief Engineer. Ensuring sewerage discharge is not within a prohibited location is by the Vessel's Master.

8.3.3 Hazardous and Regulated Waste

Hazardous waste includes waste oils, oily water, oil sludge, chemicals and paints. The vessel is fitted with four 240 L hazardous waste bins for oily rags and oil filters which are serviced by appropriately licensed contractors when required. Oily water is contained within the bilge water holding tank and is discharged onshore by a licensed contractor. Oils are recycled through the engine until the waste oil forms a sludge which is transferred to a holding tank for onshore pumpout by a licensed contractor. Any minor amounts of hazardous waste materials are contained in designated hazardous waste bins and stored in bunded areas until discharge onshore.

Regulated wastes are a stream of controlled wastes that are unlikely to be produced on board but include materials that the vessel may come across and remove from the river channel during the operation. This includes items such as tyres.

Further details are contained within the Waste Management Plan (section A20 of the *TSHD Brisbane* Operational and Administration Procedures Manual).

Element	**Waste Management – Hazardous Waste**
Objective/Target	To ensure hazardous waste generated on-board and regulated waste is appropriately managed.
Actions	During at-sea operations: • All hazardous/regulated waste to be stored in appropriate manner (contained and bunded) and clearly marked in accordance with legislative requirements. • All procedures to minimise and respond to spills should be followed. Spill response equipment shall be easily identifiable and conveniently located. Spills will be cleaned up as soon as practicable. • A register of hazardous substances stored/used on the dredger will be kept and SDS's available via ChemAlert. During transfer: • Hazardous/regulated waste to be collected by licensed contractor only, for disposal at approved facility. • All procedures to minimise spills during transfer of hazardous waste to contractor shall be followed. Spill response equipment shall be easily identifiable and conveniently located. • Disposal of all hazardous/regulated waste to be recorded in accordance with the requirements of section A20 of the *TSHD Brisbane* Operational and Administration Procedures Manual
Performance Indicators	No inappropriate storage, disposal, or spill of hazardous wastes.
Monitoring	Reporting by all crew of any observations of inappropriate storage, handling, or spill of hazardous wastes.
Reporting	Exception reports directly to Vessel Master.
Corrective Action	Vessel Master to assist with clean-up of spill, review procedure breakdown and correct if required. This may include staff training.
Term	During all operations.
Responsibility	Management and operation of on-board system is by the Vessel Master, with input from Environment Manager PBPL as required.

8.4 Emissions

The *TSHD Brisbane* is fitted with modern and fully maintained emission reduction devices to limit emissions generated during works as much as possible. Further, the nature of the works is such that the potential for disruptive noise, vibration, light, or air quality to sensitive places (e.g. residential areas) is limited by distance.

Element	Emissions Management
Objective/Target	To ensure emissions generated by operation of the *TSHD Brisbane* does not unduly impact adjacent areas.
Actions	**Noise** • All noise reduction equipment to be maintained as per manufactures' specifications. • Where the vessel is operating in an especially noise sensitive environment (e.g. close proximity to residential areas), crew are to be informed to minimise noise where possible. • All noise from activities must not exceed the acoustic quality objectives specified in the *Environmental Protection Noise Policy 2019.* **Light** • All lighting to be maintained as per manufacturers' specifications • Where practicable, LED lighting will be used to provide more direct illumination of tasks and reduce light spill. • Use of external vessel lighting will be minimised unless required for safety purposes **Air quality** • All combustion plant particularly main and auxiliary engines to be maintained as per manufactures' specifications. • Appropriate adjustment of trim and ballast to ensure effective operation. • Exhaust stack to be visually monitored to ensure no visual dark emissions **Vibration** • All equipment on board the *TSHD Brisbane* to be maintained as per manufacturers' specifications.
Performance Indicators	No emissions-based complaints regarding the operation of the vessel.
Monitoring	All complaints recorded in appropriate system and forwarded to Vessel Master and Environment Manager. If necessary (e.g. if requested by DES) noise shall be monitored to determine the level of impact.
Reporting	Any complaints to be reported to Vessel Master, PBPL Environment Manager, and PBPL Manager Dredging Operations. Ports North will be advised in accordance with the Reporting protocol detailed in Section 9 of this EMP (refer also to Section 10.1) Annual review of all complaints received and follow-up action undertaken.
Corrective Action	Vessel Master to investigate source of complaint. If this relates to inappropriate work practices, inform crew of necessary changes and ensure these are undertaken. If complaints relates to plant, investigate effectiveness of emissions reduction equipment and review/replace as required.
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from Environment Manager as required.

8.5 Turbidity Control

PBPL vessel crew will make observations to ensure that the dredging operation minimises turbidity production and adjust on-board systems if required, and provide notification to Ports North to reduce impacts to adjacent marine resources, such as seagrasses. The *TSHD Brisbane* is fitted with a range of best practice design features (e.g. central column weir anti-turbidity valve and below keel discharge) to minimise production of turbid waters.

Any turbidity monitoring (direct or indirect) of the dredging works will be undertaken by Ports North in accordance with their monitoring program detailed in their approved LTMDMP.

Element	Turbidity Management
Objective/Target	To ensure turbid plumes generated by operation of the *TSHD Brisbane* are minimised.
Actions	• Within the practicalities of the vessel, minimise the generation of plumes by control of the discharge weir system. • Ensure dredging and material relocation is undertaken within the approved areas only by reference to electronic navigation aids and visual marks as required. • Observe all site-specific requirements, which may influence dredging times or the use of overflow dredging (e.g. tides, wind direction and velocity etc.). • Ports North to implement monitoring programs in accordance with their approved LTMDMP.
Performance Indicators	No dredging or placement of material outside approved areas.
Monitoring	Review of vessel dredging and placement tracks against approved area boundaries. Daily review of area immediately adjacent to vessel during dredging and dumping, pictures to be taken once per day
Reporting	Reporting of any high turbidity plumes during dredging or dumping to be recorded in dredge logs (approximate size and details etc.) and to be reported to ports north Ports North will be advised in accordance incident reporting protocol detailed in Section 9 of this EMP. Reporting by Ports North of any turbidity issues identified by monitoring activities to Vessel Master.
Corrective Action	Vessel Master to investigate the reason for any release of dredged material outside the nominated spoil ground and take appropriate action. Ports North to determine if corrective action to reduce turbidity production is required. Vessel Master to develop and implement appropriate corrective action in consultation with Marine Operations Manager (corrective actions may include reduction in load size, no overflow dredging, etc).
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from PBPL Marine Operations Manager and PBPL Environment Manager as required. Ports North is responsible for determining if turbidity levels from the dredging works are exceeding acceptable levels and determining if corrective action is required.

8.6 Protected Marine Fauna

The following procedure outlines the management to be put in place to minimise the risk of harming turtles, dugongs and cetaceans during dredging operations. In the event of an incident, contacts are to be followed as outlined in this document.

Element	Protected Marine Fauna
Objective/Target	To ensure the minimisation of the capture of, or harm to, protected marine fauna during dredging and material relocation process.
Actions	• Dredging and material placement only in approved areas. • Turtle excluders must be fitted during all operations. • Load to be inspected on an opportunistic basis for marine fauna remains. • Procedure for minimising turtle capture as set out in *Dredging and Dredged Material Management Plan – TSHD Brisbane* to be followed. Refer to extract below in section 10.5. • Final suction at the dredge head will be minimised when not in contact with the sea bed. • Vessel watch personnel to maintain watch in high risk areas and take necessary action where risk of collision exists. • Before commencing each dredging or dumping run, a check must be undertaken from the dredge vessel using binoculars, for marine mammals and/or turtles within the monitoring zone. Monitoring zone means an area within 300 metres of the vessel in all directions at any point on a loading or dumping run. • If any marine mammals and/or turtles are sighted in the monitoring zone: (i) do not commence dumping activities in the monitoring zone until 20 minutes after the last marine mammal and/or turtle is observed to leave the monitoring zone; or (ii) the vessel is to move to another area, where dumping activities are permitted, to maintain a minimum distance of 300 metres between the vessel and any of the marine mammals and/or turtles
Performance Indicators	No dredging or placement of material outside approved areas. No capture of, or harm to, protected marine fauna.
Monitoring	Review of vessel dredging and placement tracks against approved area boundaries. Load to be inspected on an opportunistic basis for marine fauna remains. Visual monitoring of 'monitoring zone, in accordance with sea dumping permit conditions. The details of any animals observed within the monitoring zone for each run, including the date, time and approximate distance from the vessel, and the action taken must be recorded in the vessel's log by the person/s undertaking the observations
Reporting	Reporting of exceptions (including if a protected species is found stranded, injured or dead within 300 metres of the permitted activities) immediately to Vessel Master, PBPL Marine Operations Manager and Environment Manager (including time, nature of incident, species involved – refer to Appendix F for additional reporting and procedural requirements for turtle captures). **This reporting requirement is irrespective of whether the fauna is dead or alive.** Ports North to be urgently advised by PBPL (via Environment Manager), in accordance with incident reporting protocol detailed in Section 9 of this EMP. This will enable Ports North to notify the GBRMPA and DAWE, within 24 hours, in accordance with the conditions of the sea dumping and marine parks approval.
Corrective Action	Vessel Master to investigate reason for exception and take appropriate action.
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from Environment Manager as required.

8.7 Cultural Heritage

Cultural heritage refers to both European and Indigenous heritage issues.

Element	Cultural Heritage
Objective/Target	To ensure dredging operations do not disturb/destroy items of European or non-European cultural significance.
Actions	• Ensure dredging and material relocation is undertaken within the approved areas only by reference to electronic navigation aids and visual marks as required. • Undertake opportunistic visual inspection of dredge load and dredge heads, reporting any items of suspected cultural significance. If items are found, retain and report to relevant authorities through Vessel Master and Environment Manager and Ports North. • Observe all site-specific requirements which may influence dredge operations.
Performance Indicators	No disturbance of items of cultural significance.
Monitoring	Opportunistic inspection of the dredged material for evidence of items of cultural heritage significance. Monitoring of dredge movement through use of electronic aids to ensure it is within designated area.
Reporting	Reporting of exceptions to Vessel Master and Environment Manager. Any evidence of items of cultural heritage significance will be reported to Ports North in accordance the reporting protocol detailed in Section 9 of this EMP.
Corrective Action	If items of potential cultural significance are detected, works should cease in the affected area if safe to do so. If possible, the item should be demarcated and left in situ until an assessment by an appropriately qualified person verifies the significance of the item. Vessel Master to investigate reason for exception and take appropriate action.
Term	During all operations.
Responsibility	Management and operation of on-board systems is by the Vessel Master, with input from Environment Manager as required.

8.8 Ballast Water Management

Ballast water from the *TSHD Brisbane* will be managed in accordance with the *Biosecurity Act 2015*. Given all dredging will occur within Port limits there is a low risk associated with the ballast water. The *TSHD Brisbane* operates under an approved Ballast Water Management Plan and utilises only low risk (i.e. freshwater) ballast at all times unless operational safety requirements require the uptake of seawater. The vessel also holds an exemption certificate from the requirements of the IMO Ballast Water Management Convention. In accordance with the exemption certificate, seawater will only ever be taken up (and therefore require discharge) if it is necessary to maintain vessel safety.

Element	Ballast Water Management
Objective/Target	To ensure that the risk of translocation of organisms in ballast water by the *TSHD Brisbane* is minimised.
Actions	• Ballast tanks filled with freshwaters will be retained without treatment. If discharge is required for safety purposes: • Any ballast tanks holding seawaters will be exchanged prior to arrival with seawaters at a location as distant from the coastline or other shallow (<100m) areas as possible, but not less than 12nm. • A record will be kept of volumes, location, and times of ballasting and de-ballasting operations.
Performance Indicators	No release of high risk ballast water during operations.
Monitoring	Review of log of ballast/de-ballasting operations.
Reporting	Vessel Master to maintain record of operations and review for non-conformances.
Corrective Action	Review the procedure causing the release and rectify immediately.
Term	During all operations.
Responsibility	Vessel Master.

8.9 Vessel Washdown

This management plan relates to the washing of the dredge head (to remove compacted sediment) or the deck (to remove splashes from the hopper/drips from the dredge heads) of the *TSHD Brisbane*. Prior to washing, preference shall be given to sweeping the deck and/or equipment.

Element	Vessel Washdown
Objective/Target	To minimise the potential for contaminants to enter the environment.
Actions	Sweeping of deck in preference to washing where possible. Washdown of the deck and or dredge head shall only occur within the designated dredging or disposal areas. Only dredged material to be release as a result of vessel washing activities (i.e. no release of oil or other contaminants)
Performance Indicators	No inappropriate use of degreasers or washdown in undesignated areas. No release of contaminants to the receiving environment.
Monitoring	Reporting by crew of any observations of contamination to the waterway whilst washing the deck/equipment.
Reporting	Exception reports directly to Vessel Master.
Corrective Action	Vessel Master to assist in clean up spill, review procedure breakdown and correct if required. This may include staff training.
Term	During all operations.
Responsibility	Management and operation of on-board system is by the Vessel Master, with input from Environment team as required.

8.10 Hopper Management

This management plan relates to the washing of the dredge hopper of the *TSHD Brisbane*. The *TSHD Brisbane* hopper shall be washed to minimise the translocation of marine organisms prior to leaving the Port of Brisbane for other ports. Hopper washing activities shall only be conducted at the Dredge Material Placement Area and contained within this designated area by giving consideration to weather and current conditions. To minimise the discharge of materials from the hopper, washing will only be conducted subsequent to pump out at the approved reclamation or placement area.

Element	Hopper Washing
Objective/Target	To minimise the release potential contaminants including the translocation of marine organisms to the environment. To perform hopper washing activities in an approved area and in such a way that the material be contained within the area.
Actions	• Washdown of hopper from time to time and when *TSHD Brisbane* leaves the Port of Brisbane port area for other destinations. • Washdown of the hopper within the designated placement area. • Washdown of the hopper subsequent to discharge of material to approved reclamation area. • Consideration of weather and current conditions prior to discharge in dredge material placement area. • During discharge the *TSHD Brisbane* will move in such a way that the dislodging of material is assisted by the vessel movement. • Hopper exchange activities carried out between ports will be recorded in the hopper exchange log.
Performance Indicators	No discharge of materials outside the designated hopper washing area (i.e., dredge placement area and reclamation area). No translocation of marine organisms to other Ports.
Monitoring	Reporting by crew of any observations of visual turbidity plumes outside the designated area. Reporting and/or observations of marine organisms foreign to the area of the current dredge location.
Reporting	Exception reports directly to Vessel Master.
Corrective Action	Vessel Master to review procedure for discharging hopper washing and correct if required. This may include staff training.
Term	During all operations.
Responsibility	Management and washing operations is by the Vessel Master, with input from Environment Manager as required.

8.11 Bunkering of fuel

The *TSHD Brisbane* uses only ultra-low sulfur fuel and regularly refuels by the use of a licensed contractor, typically during provisioning/crew change operations. While this plan is presented in this document to address bunkering operations, the *TSHD Brisbane* has an Australian Maritime Safety Authority (AMSA) approved Oil Spill Response Plan on board as part of the ISO 9004 accredited documentation.

Element	Bunkering of Fuel
Objective/Target	To ensure bunkering of fuel to the *TSHD Brisbane* is appropriately transferred and spillage is prevented.
Actions	During land transfer: • Licensed contractor is used to transfer fuels and levels shall be monitored. • All appropriate spill kit equipment will be on site and all personnel will be trained in the use of spill kits.
Performance Indicators	No spills or leaks during fuel transfer.
Monitoring	Visual inspections of fuel-dispensing equipment during fuel transfer.
Reporting	Reporting of spills/leaks to Vessel Master in the first instance, then PBPL Marine Operations Manager/Environment Manager and Ports North.
Corrective Action	In the event of a major spill, call Emergency Spill Response team for corrective action in accordance with the *TSHD Brisbane* Emergency Management Manual. All minor spills will be cleaned up or contained until further assistance (if required). Vessel Master to investigate source and cause of spill or inappropriate work practices. Change to operating procedures and inform crew.
Term	During all operations.
Responsibility	Management and operation of bunkering of fuel is by the Vessel Master.

8.12 Ship energy efficiency management plan

The Ship Energy Efficiency Management Plan (SEEMP) is mandatory for ships over 400 GT, as required by IMO regulations.

Element	Ship energy efficiency		
Objective/Target	To reduce carbon emissions by identifying and implementing energy saving measures where there is business case to do so.		
Actions already completed/undertaken	Voyage planning, communication with next port to adjust speed, appropriate adjustment of trim and ballast for job, installation of new propellers (2010), optimised hull and propeller maintenance schedule, installation of a modern autopilot system (2010), replacement of onboard stove, propeller nozzle assessment (2013), voyage planning information update (2013), propeller nozzles installed (2014), cost benefit analysis of engine replacement (2015), replacement of engines (2015), electronic fuel injectors (2015), assess and (if appropriate) install trial LED lighting (2016), implement formal QPA-endorsed risk assessment process in conjunction with northern ports to ensure dredging is scheduled in such a way as to ensure maximum efficiency and minimised fuel usage (2017), compare pre- and post- booster installation fuel usage to determine if increased efficiency was observed after their installation, trialled using shore power to pump material ashore (2021), started purchasing carbon neutral fuel from Ampol (2022), Installed energy consumption monitoring hardware and software (2025),		
Assessed but no business case/not feasible at the time	Weather routing (2010), low resistance paint (2010), solar panels (2013), LED flood lighting for deck (2018), LPG availability in Queensland ports (2019), Biofuels investigation (2020).		
Improvements	*Actions*: Renewable fuels demonstration project (2026) Defining efficient operational parameters based on data collection (2026). Consider further usage of renewable diesel (2026). See Energy Transition Plan for more details.	*Person responsible:* Senior Manager Marine (Technical and Fleet)	*Due date:* Ongoing
Performance Indicators	Annual fuel consumption review. Sustainability emissions targets.		
Monitoring	Annual review.		
Reporting	Energy consumption reported in Sustainability Report and via HSSC.		
Corrective Action	Review and make recommendations for improvement		
Term	During all operations		
Responsibility	Senior Manager Marine (Technical and Fleet)		

9 Incident Reporting

Reporting protocols for emergency incidents (e.g. major oil spill) are discussed in Section 11.

Non-emergency reporting requirements for EMP non-conformances are outlined in the above tables. To ensure Ports North and PBPL are adequately informed of incidents, or non-conformances with this EMP:

- The PBPL internal reporting system will be maintained; and
- Ports North will be advised of all incidents via the following protocol:
    1. The Vessel Master will liaise directly with the PBPL Dredging Operations Manager (DOM) and/or the Environment Manager (EM).
    2. Following discussion the appropriate PBPL staff member (either Vessel Master, DOM or EM) will verbally report the incident to the following Ports North locations/staff:
        - Ports North Operations Centre, (07) 4052 3860 or 0418 778 360
        - Ports North Senior Environment Advisor, 0439 723 008.
    3. Written incident reporting will be communicated to Ports North using the forms contained in Appendix C within three working days. These will only be completed by the Vessel Master and forwarded by the PBPL DOM and/or EM. The DOM or EM will forward to Ports North and maintain close liaison to ensure full information disclosure.

10 Environmental Monitoring

PBPL will be responsible for the following environmental monitoring components during the Port of Cairns maintenance dredging project. The remaining components of the monitoring will be managed by Ports North with input from PBPL as required.

10.1 Environmental Complaints

Any complaints received by PBPL staff relating to the operation of the *TSHD Brisbane* will be recorded as part of standard operating procedures of the PBPL's Integrated Management System. Complaints will be recorded on the appropriate form and forwarded to the Vessel Master. The Master will then initiate actions to resolve/investigate the complaint as required, with assistance from PBPL staff (e.g. Environment Manager) as necessary. Prior to a response the Ports North Environment Manager will be contacted and the course of action will be discussed. A copy of all complaints will be forwarded to Ports North when the item has been closed.

Issues which are not directly related to the operation of the *TSHD Brisbane*, but are related to the Cairns dredging project will be forwarded to the Ports North Environment Manager. Whilst feedback on the resolution of the issue will be sought for recording on PBPL systems, the management of the issue will be the responsibility of Ports North.

10.2 Dredging Activity and Observations

The crew of the *TSHD Brisbane* will keep a record of dredging activity which will be forwarded to Ports North upon completion of the dredging program and is available upon request throughout the campaign. Such information will include

- Times and dates of when each material placement run is commenced and finished;
- begin and end points of dredge runs;
- GPS track for each material placement run;
- GPS track for each dredge run;
- material type;
- volume of dredged material dumped;
- location of material disposal;
- the person(s) undertaking the marine species observation;
- volume of fuel used in the project; and
- other pertinent observations as part of the standard vessel operating procedures.

Based on the record of dredging progress, Ports North Superintendents Representative will advise PBPL Site Supervisor when the estimated number of days to reach total permitted campaign volume is predicted to occur. Ports North is to manage the notification to GBRMPA and seek permission to access contingency volume if required.

10.3 Turbidity

TSHD Brisbane crew will make all attempts to utilise the onboard features (e.g. flooded weir, submerged outlet) to minimise the generation of turbidity plumes as outlined in Section 8.4. Opportunistic visual observations of this discharge will be used by the crew to ensure all efforts made are effective.

The crew of the *TSHD Brisbane* will also undertake daily visual observations of the dredge and disposal areas. Should there be significant residual turbidity, this will be reported to the PBPL Site Representative for communication to the Ports North Senior Environmental Advisor and General Manager Operations.

10.4 Cultural Heritage

Opportunistic visual inspections of dredge load and dredge heads will be completed by vessel staff reporting any items of suspected cultural significance. If items are found they will be retained and reported as outlined in Section 8.7.

10.5 Protected Fauna

During loading and disposal operations observation and avoidance of fauna of significance, including turtles, dugong and cetaceans will be made and any observations actioned as per Section 9. The observation records must include the name(s) of the person(s) undertaking the marine species observation for each run.

Refer to Appendix F for protocols for marine turtle capture/injuries/strandings during operations.

Procedure for Dredging with Regard to Marine Turtles' as extracted from *Dredging and Dredged Material Management Plan – TSHD Brisbane:*

1. *Dredge drag-heads are to be fitted with turtle deflectors during all operations.*
2. *Where dredging without turtle deflectors is intended, the prior written authority of the Manager Marine Operations must be obtained. This authority is to be developed in conjunction with the Environment Manager regarding a risk assessment of the potential of turtle capture.*
3. *A visual inspection of the deflectors will be made when the drag-heads are recovered after each load. The inspection shall note damage and/or excessive wear which may inhibit the effectiveness of the device.*
4. *The patterns of wear on the deflector shall be noted to provide a constant check that they are functioning efficiently, maximising both the use and life of the unit.*
5. *Notification to be provided to vessel master as soon as possible if the deflectors require repairs. Repairs to be made at the earliest opportunity.*
6. *Initial suction at the dredge head (start dredging) will be minimised when not in contact with bed. This shall include:*
    - *initiating dredge pumps as late as possible in descent of head;*
    - *running pumps at the slowest possible speed.*
7. *Final suction at the dredge head (end dredging) will be minimised when not in contact with bed. This shall include:*
    - *stopping dredge pumps as soon as possible in ascent of head;*
    - *running pumps at the slowest possible speed.*
8. *When lowering the drag heads, the trunnion should be lowered first. Once the drag heads are in the water, the jets pumps will be activated. These will remain in action until the swell compensator comes off indicating that the heads are in contact with the bed. The jets can then be turned off.*
9. *In raising the heads, the jet pumps should be turned on before the heads leave the bed. The procedure should then be followed as in 7 above. The jets will remain on until the head is at the water's surface.*
10. *The speed of the vessel will be minimised at all times when the heads are off the seabed. This shall include initial deployment and recovery at the end of a dredge run. At no time shall the speed of the vessel exceed normal dredging speed while the heads are in the water, whether clear of the bed or not. The vessel should maintain minimal headway to ensure the jet pump curtain protects the heads.*
11. *In the unfortunate event a turtle is caught in the drag-head, the on duty dredge master shall report this immediately on the prescribed form and advise the master as soon as possible.*
12. *Reports to be completed on the respective forms. Inspect animal for tags, especially on front flippers. If present, note details and if possible, retain tag for forwarding to Environment Manager.*

10.6 Introduced Marine Pests

An Introduced Marine Pest (IMP) survey was completed on the vessel and tender vessel on 3 June 2026. The TSHD Brisbane was an in-water inspection with the tender vessel being a dry inspection.

The inspections of the vessels reported minor biofouling but noted nothing of concern.

In addition prior to arrival at port ofCairns an introduced marine pest (IMP) risk estimator was completed for the TSHD Brisbane. The risk estimator takes several factors into consideration including vessel speed, operational routes and the age and suitability of the antifoul coating. The TSHD Brisbane is considered to have a low risk of IMS, the risk estimator is available in **Appendix G.**

11 Emergency Procedures

The *TSHD Brisbane* maintains a Shipboard Oil Pollution Emergency Plan, which outlines the role, responsibilities and actions to be followed should an uncontrolled release of oils/fuels occur. PBPL will also comply with the prevailing Port of Cairns Emergency Response Plans as defined by Ports North and Maritime Safety Queensland – these and the relevant emergency contact details can be found in the Port Procedures and Information for Shipping for Cairns, available on the Maritime Safety Queensland website. Further, all crew are trained and accredited in accordance with the Australian Maritime Safety Authority (AMSA) requirements for Australian Coastal voyages.

The vessel is part of the PBPL's work site, which is accredited to AS4801 Safety Management System. As part of this system, all onboard procedures are available to all crew in a written format in the Operational Procedures Manual and Vessel Log, maintained by the Vessel Master.

The vessel has four lines of communication available at all times, including VHF and UHF radio, mobile satellite phones.

12 Training and Awareness

PBPL personnel (including contractors) involved in the Port of Cairns maintenance dredging must:

- Be suitably trained for any and all activities for which training is required in order to ensure legislative compliance; and prevent environmental harm during normal operation and in emergencies;
- Read, understand and apply the requirements outlined in this EMP, Ports North Management Plans, its associated approvals and *EP Act*; and
- Untrained persons must remain under the close supervision of a suitably trained person.

Training records shall be maintained and made available to Ports North on request.

Appendix A

Untreated Sewage Discharge Cairns

The discharge of untreated sewage, is required to comply with *s47* of *Transport Operations (Marine Pollution) Act 1995* (TOMPA), Schedule 4 of *Transport Operations (Marine Pollution) Regulation 2008* (TOMPR) and section 93 of the *Great Barrier Marine Park Regulation 1983 (GBMPR)* as prescribed below.

Transport Operations (Marine Pollution) Act 1995 (TOMPA)

Section 47

Discharge of untreated sewage into nil discharge waters for untreated sewage prohibited

1. If untreated sewage is discharged from a ship into nil discharge waters for untreated sewage, each culpable person for the discharge commits an offence.

   Maximum penalty—850 penalty units.

2. The nil discharge waters for untreated sewage are the coastal waters prescribed under a regulation for this section.

Transport Operations (Marine Pollution) Regulation 2008 (TOMPR)

Section 44

Nil discharge waters for untreated sewage

For section 47 of the Act, the nil discharge waters for untreated sewage are—

a) on and from 1 September 2008 to 31 December 2009—the coastal waters stated in schedule 4, part 1; and
b) on and from 1 January 2010—the coastal waters stated in schedule 4, part 2.

Schedule 4; Part 2

Nil discharge waters for untreated sewage

(On and from 1 January 2010)

1. Prohibited discharge waters.
2. Smooth waters.
3. If a ship has 16 or more persons on board – Hervey Bay waters, Northern Moreton Bay waters and open waters.
4. Hervey Bay waters and northern Moreton Bay waters, within 1852m of any of the following—
   a) aquaculture fisheries resources;
   b) a reef;
   c) the mean low water mark of the mainland;
5. Open waters—
   a) within 926m of a wharf or jetty other than a jetty that is a marina; or
   b) within 1852m any of aquaculture fisheries resources; or
   c) if a ship has 7 – 15 persons on board – within 1852m of any of the following—
      (i) a reef;
      (ii) the mean low water mark of an island or the mainland.

Definitions:

prohibited discharge waters means waters of any of the following—

a) a boat harbour;
b) a canal;
c) a marina;
d) a designated area.

a designated area means each of the following areas—

a) the marine national park zone under the *Marine Parks (Moreton Bay) Zoning Plan 2008*;
b) the Noosa River;
c) the marine national park zone, under the *Marine Parks (Great Sandy) Zoning Plan 2006*, located near Burkitt's Reef, Hoffman's Rocks or Barolin Rock, adjacent to the Woongarra Coast;
d) an area within the Great Barrier Reef Coast Marine Park mentioned in schedule 8.

smooth waters means the waters defined as smooth waters under the Transport Operations (Marine Safety) Regulation 2004, schedule 15, but not including—

a) the waters described in schedule 12 of that regulation that are within 0.5n miles from land; and
b) prohibited discharge waters.

Hervey Bay waters means the waters of Hervey Bay, other than prohibited discharge waters, within a boundary drawn—

- from Burrum Point on the mainland to the Fairway Beacon, Hervey Bay
- to Rooney Point, Fraser Island
- along the western shore of Fraser Island to latitude 25º22.90' south
- to latitude 25º24.90' south, longitude 152º58.06' east
- due west to the mainland at latitude 25º24.90' south.

Northern Moreton Bay waters means the waters of Moreton Bay, other than prohibited discharge waters, within a boundary drawn—

- from latitude 27°06' south on the mainland to South Point, Bribie Island
- along the southern shore of Bribie Island to Skirmish Point
- to Comboyuro Point, Moreton Island
- along the western shore of Moreton Island to Reeders Point
- to Amity Point, North Stradbroke Island
- to Cleveland Point on the mainland.

open waters means coastal waters, other than Hervey Bay waters, northern Moreton Bay waters, prohibited discharge waters and smooth waters.

Great Barrier Reef Marine Park Regulations 1983

Section 93D

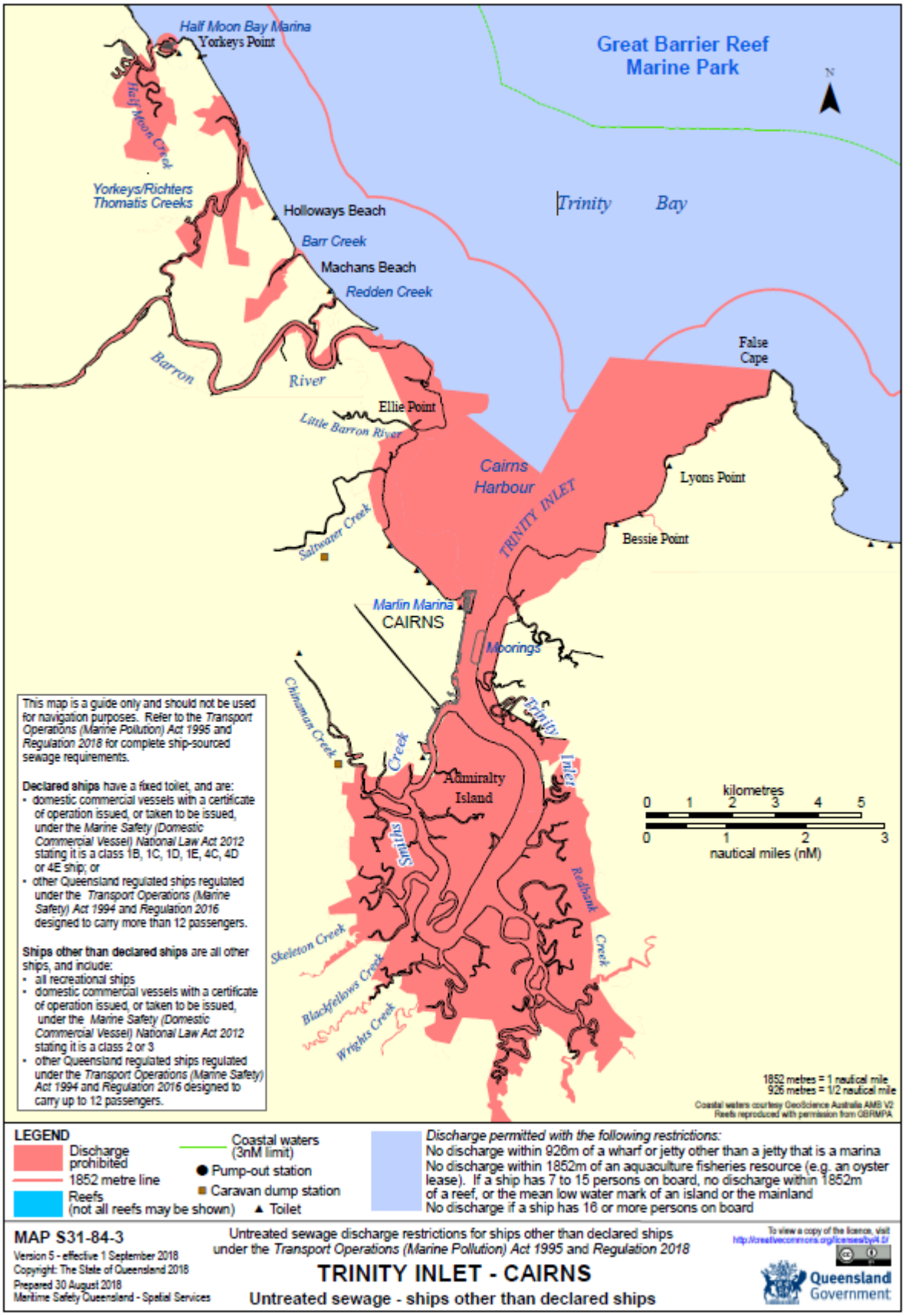
Discharge of untreated sewage from vessels

1. Subject to regulation 93F, the master of a vessel that has 15 or fewer persons on board may allow untreated sewage to be discharged from the vessel in the Marine Park if:
    a. the vessel does not have a fixed toilet; or
    b. where the vessel has a fixed toilet, the sewage has been reduced to a fine slurry.

Section 93F

Discharge of sewage from vessels generally

1. Regulation 93D and paragraphs 93E (b), (c) and (d) are not taken to authorise sewage to be discharged from a vessel in the Marine Park if the vessel is inside a boat harbour, canal or marina.
2. Regulation 93D is not taken to authorise untreated sewage to be discharged from a vessel in the Marine Park if the vessel is less than 1 nautical mile from the seaward edge of an aquaculture operation.



Discharge Locations for Untreated Sewage

Appendix B

Environmental Approvals

Appendix C

Ports North Incident Notification Form

Appendix D

Long Term Management Plan, Dredging and Spoil Management

https://www.portsnorth.com.au/environment-community/environment/dredging/

Appendix E

Ports North Environment Policy

Ports North

Environment Policy

Ports North is responsible for nine Port locations including trading Ports of Cairns, Mourilyan, Cape Flattery, Karumba and Skardon River), community Ports (Thursday Island and Quintell Beach) and non-trading Ports (Cooktown and Burketown).

Ports North strives to operate a viable business that considers financial, environmental, and social impacts by identifying and implementing initiatives that promote excellence in environmental management at these Ports.

To demonstrate environmental leadership, Ports North will:

- Implement and maintain an environmental management system to meet the standard set by AS/NZS ISO14001:2015, as a tool for continual improvement in environmental performance;
- Comply with relevant environmental laws, regulations, policies, procedures, and standards;
- Identify, assess and minimise risk and potential impacts of Port activities;
- Integrate environmental considerations and principles of sustainable development into management processes and decision making;
- Maintain emergency, fire protection, security systems and infrastructure to protect the environment;
- Strive to use resources efficiently, minimise waste and prevent pollution;
- Apply sufficient and appropriate people and resources to achieve this Environmental Policy;
- Define, measure and report regularly against objectives and targets to review the effectiveness of performance; and
- Communicate this Policy to staff and stakeholders to build collaborative relationships to promote superior environmental outcomes.

The Chief Executive Officer and Senior Management are responsible for providing the leadership to support effective implementation of this Policy and for ensuring all Ports North's staff, contractors and those engaged by the organisation are required to comply with this Policy.

This Policy will be regularly reviewed following legislative or organisational changes, or at a minimum of every three years, to ensure it reflects the nature and potential impacts of Port activities and services.

Richard Stevenson
Chief Executive Officer
October 2023

Port of Cairns | Cape Flattery | Karumba | Mourilyan | Skardon River | Quintell Beach | Thursday Island | Burketown | Cooktown

Appendix F

Marine Fauna Incident Response

Appendix G

IMS Risk Estimator