PORT of BRISBANE
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PORT OF BRISBANE
Dredging Environmental Management Plan
TOWNSVILLE

JULY 2025

CONTENTS

1 Introduction

The Port of Brisbane Pty Ltd (PBPL) has been contracted by Port of Townsville Ltd (POTL) to undertake maintenance dredging at the Port of Townsville. These dredging works will be conducted by the PBPL's dredger, the Trailer Suction Hopper Dredge (TSHD) *Brisbane*. Works are scheduled for a period of approximately 25 days commencing on, or about, 9 July and finishing 3 August 2025. It is noted that all dredging for the 2025 season must finish before or on before 28 August 2025 (to avoid a sailing race event).

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**) and the operational controls detailed in the POTL Long Term Maintenance Dredging Management Plan (**Appendix E**), have been considered in the preparation of this EMP.

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 POTL'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 84m 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 4-6m 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 (<0.075mm) 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.

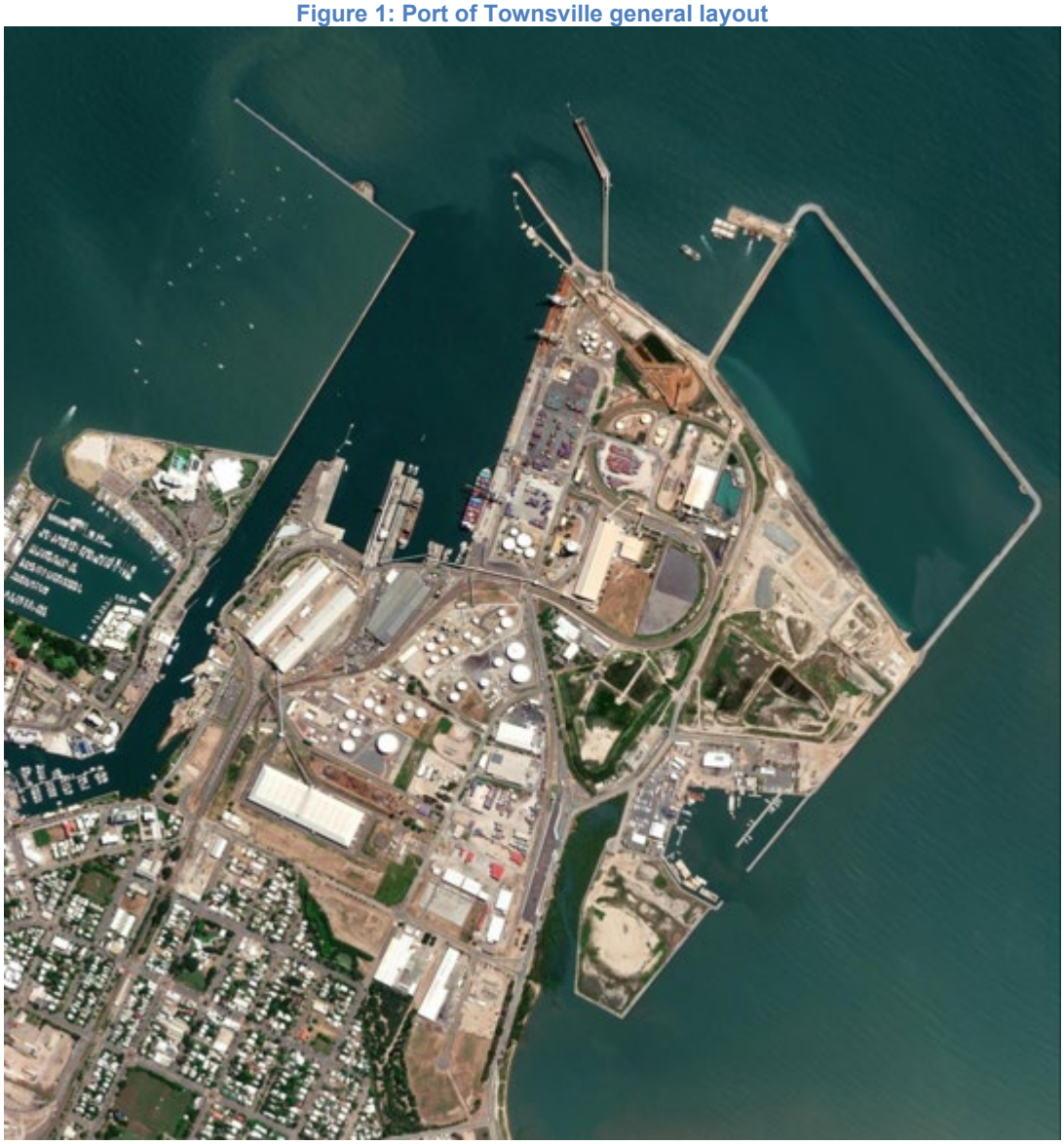
Alternately, the material can be pumped out via a bow discharge pipe (generally used for onshore placement). A floating pipeline is connected to the bow coupling and material within the hopper agitated with high-pressure water jets to achieve the correct consistency for pumping. Material is then delivered 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 Port of Townsville is located approximately 1,300 km north of Brisbane. The port is located at the mouth of the Ross River and Ross Creek within Cleveland Bay. Figure 1 shows the general layout of the Port of Townsville.

Figure 1: Port of Townsville general layout



4 Description of Site

The Port of Townsville is one of Queensland's fastest growing ports and services the northeast and northwest provinces of north Queensland. The local resources sector represents approximately 50% of Townsville's exports and 75% of imports, with these figures forecast to grow significantly over the coming years.

The Port has eight operational berths. Berths are equipped with bulk handling facilities including pipelines for oil, chemicals and molasses, shiploaders for sugar and metal concentrates, cranes for containers, metals, nickel ore and break bulk cargo. Shipping access to the Port is via a 14km shipping channel that extends from the Port in a NNE direction across Cleveland Bay, passing by the south eastern side of Magnetic Island.

5 Description of Activity

The scope of the maintenance dredging works is to remove approximately 357,000 m^3 maintenance dredge material from the Platypus Channel, Outer Harbour, Inner Harbour and Berths (1, 4, 9, 10 and 11). No material will be removed from any other Berth.

Material consists of sand, clays and silts, generally deposited from upper catchments run-off or from settlement of resuspended material from Cleveland Bay. All material generated by the dredging will be placed at the existing dredge material placement area which has been used for previous dredging campaigns. The dredge material placement area (DMPA) is located within the following coordinates (consistent with Sea Dumping Permit conditions):

- 19°07'36" South and 146°56'51" East
- 19°07'36" South and 146°58'51" East
- 19°09'45" South and 146°57'29" East
- 19°08'54" South and 146°56'01" East

Note – the DMPA is generally split into a shallower and a deeper section, only the deeper section of the DMPA will be utilised during the 2025 dredging campaign.

Works are scheduled for a period of approximately 25 days commencing on, or about, 9 July and finishing no later than 3 August 2025, removing approximately 366,000 m^3 under Commonwealth Sea dumping permit SD2018-3942 Variation 3 and Queensland State Government Sea placement permit 1901-9462 SDA. It is proposed that the *TSHD Brisbane* will operate 24 hours per day, during the contract period, unless regulatory restrictions or operational constraints are imposed.

To optimise the dredger's efficiency during the dredging project, a Sweep Bar will work in conjunction with the Brisbane and conduct the final 'levelling' of the sea floor. The Sweep Bar does not function as a dredge but is a material moving device. The Sweep Bar will only operate within the approved dredge areas. Additional care will be taken when bed levelling in areas where material is not approved for disposal at the DMPA. The sweep Bar will be operated by East Coast Marine, the sweep bar is not covered by this EMP; a separate EMP for the Sweep Bar work will be developed and implemented.

Label	Latitude	Longitude	Easting	Northing
A	19° 14' 52.29" S	146° 50' 9.64" E	482766	7871739
B	19° 14' 51.95" S	146° 50' 8.61" E	482735	7871749
C	19° 15' 0.67" S	146° 50' 5.41" E	482642	7871481
D	19° 15' 1.04" S	146° 50' 6.51" E	482674	7871470
E	19° 15' 7.81" S	146° 50' 4.02" E	482602	7871262
F	19° 15' 7.44" S	146° 50' 2.92" E	482570	7871273
G	19° 15' 5.02" S	146° 50' 3.87" E	482597	7871347
H	19° 15' 4.66" S	146° 50' 2.77" E	482565	7871358
I	19° 15' 4.25" S	146° 50' 2.92" E	482570	7871371
J	19° 15' 2.39" S	146° 50' 2.87" E	482568	7871428
K	19° 15' 1.7" S	146° 50' 0.96" E	482512	7871449
L	19° 15' 2.47" S	146° 50' 0.67" E	482504	7871425
M	19° 15' 1.92" S	146° 49' 59.15" E	482459	7871442
N	19° 15' 2.96" S	146° 49' 58.77" E	482448	7871410
O	19° 15' 0.93" S	146° 49' 49.0" E	482163	7871473
P	19° 14' 59.78" S	146° 49' 45.44" E	482059	7871508

Figure 2 – No Dredge areas at port of Townsville (Orange shading)

6 Environmental Legislation and Approvals

The primary environmental legislation relevant to this dredging project is briefly discussed below. Should specific legislative matters arise during the project these should be addressed to the PBPL Environment Manager, who will provide advice. If applicable, this advice will be developed in consultation with the POTL Manager Climate and Environment.

State Legislation

There are several pieces of state legislation that relate directly to the management of dredging activities.

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 1000t 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 5000t 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.*

POTL currently holds an Environmental Authority for ERA 16 approval for these maintenance works.

POTL and PBPL have a general responsibility under the EP 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). POTL have an Operational Works Approval for the Disposal of Dredged Material in Tidal Waters for maintenance dredging.

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.

6.1.4 Biosecurity Act 2014

The main purposes of this Act are:

(a) to provide a framework for an effective biosecurity system for Queensland that:
  (i) Helps minimise biosecurity risks; and
  (ii) Facilitates responding to impacts on biosecurity consideration, including responding to biosecurity events in a timely and effective way.

The most relevant purpose of the act to dredging is as follows:

(2) it is also the purpose of this act to manage risk associated with the following:
  (a) emerging, endemic and exotic pests and diseases that impact on:
    (i) plant and animal industries, including agriculture, aquaculture, horticulture, fisheries and forestry industries; or
    (ii) the built environment; or
    (iii) Companion or leisure animals; or
    (iv) (iv) biodiversity and the natural environment; or
    (v) (v) tourism, lifestyle and pleasure industries; or
    (vi) Infrastructure and service industries, including power, communication, shipping and water supplies.

In water marine pest inspections are completed prior to the TSHD Brisbane leaving Moreton Bay to assess for marine pests. In addition, approved anti foul paints are used on the hull to minimize biofouling. Ballast water is also managed in compliance with the Biosecurity Act.

Federal Legislation

6.1.5 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 and artificial reef placements, and for related purposes.

POTL hold a Sea Dumping Approval allowing for the disposal of the maintenance dredge material at sea within an approved area.

6.1.6 Biosecurity Act 2015

The Biosecurity Act provides a framework for managing and responding to biosecurity risks and emergencies. Where required systems on the TSHD Brisbane are in place to manage risks associated with Biosecurity and are in compliance with the Biosecurity Act 2015.

Approvals

POTL hold the following approvals for the 2025 maintenance dredging works:

- Environmental Authority EPPR00771113.
- Sea Dumping Permit SD2018-3942 (variation no.3)
- Operational Works (Tidal Works) Approval 1901-9462 SDA

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 it's dredging operations comply with those conditions of the above approvals for which it is responsible, and in compliance with POTL Dredge management Plan and long term maintenance dredging management plan (**Appendix E**) and the dredging contractual arrangements. POTL, as the proponent, is responsible for supplying all relevant information regarding the environmental approvals and associated conditions to the PBPL. POTL have also reviewed and approved this EMP.

7 Roles and Responsibilities

The approvals for the dredging project include a range of conditions 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 POTL have clarified responsibility for compliance with the various conditions.

Table 1 provides an outline of the roles and responsibilities of the staff involved in the Townsville maintenance dredging project. This also provides an outline of the Chain of Command and links between parties involved in the project.

Table 1: Roles and responsibilities of key employees associated with the 2025 Townsville maintenance dredging project

Position	Contact Numbers	Responsibility	Reporting to	Contact Numbers
PBPL Staff Onboard *TSHD Brisbane*				
Vessel Master	[redacted]	Responsible for all aspects of vessel shipboard management	Head of Dredging Operations (on shore)	[redacted]
Chief Engineer	[redacted]	Responsible for operation and maintenance of onboard machinery	Vessel Master	[redacted]
PBPL Staff On-Shore				
Site Representative	[redacted]	Management of day to day operations of project	Head of Dredging Operations (on shore)	[redacted]
Head of Dredging Operations (on shore)	[redacted]	Management of overall operations of dredger.	Executive General Manager Marine	[redacted]
Environmental Advisor	[redacted]	Responsible for undertaking monitoring of EMP implementation	Environment Manager	[redacted]
Executive General Manager Marine	[redacted]	Responsible for overall management of the Corporation's dredging activities	Chief Executive Officer	
POTL Staff				
Dredging l Lead	[redacted]	Project Manager. Management of contract between POTL and PBC		
Assisting Engineer	[redacted]	Provide support to the Project Manager.	Assistant Manager Assets and Maintenance	[redacted]
Environmental Advisor	[redacted]	Environmental management support.	Manager Climate and Environment	[redacted]
Environmental Technical Advisor	[redacted]	Verification EMP has been implemented and auditing Environmental performance.		
Hydrographer	[redacted]	Hydrographic surveys		

Position	Contact Numbers	Responsibility	Reporting to	Contact Numbers
MSQ Contacts				
Regional Harbour Master	[redacted]	Contact for hazardous spills and shipping safety issues		

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, Dredging Operations Manager, and Environment Manager. No such works will be undertaken until such formal instruction is received from POTL. Any instruction given must be done so with enough time for Port of Brisbane to review and confirm their on-board management plans allow for the changes (i.e. the request is not in contradiction to dredge procedures, permits or authorised dredge areas etc.)

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 placement activities;
- 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 POTL to undertake the dredging works. Ultimate responsibility for the project lies with POTL 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 POTL.

Records will be maintained for all PBPL personnel instructed in the requirements of this EMP. This will include crew onboard the *TSHD Brisbane* and onsite shore support personnel.

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

Structure

Each of the Management Plans within this document follows the structure outlined in Table 2 below.

Table 2: 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.

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 POTL.

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. For the 2025 dredging campaign in Townsville's outer harbour and channel, overflow will not occur unless operationally necessary to minimise potential influence on coral and seagrass sensitive receptors in Cleveland Bay. In the event that overflow is to be considered in the Outer Harbour and Platypus Channel, this requirement will be notified to the POTL Dredge Lead and discussed in the context of the marine water quality status and operational need. . Daily meetings during the week and as needed on weekends, will be held with PBPL and POTL representatives to discuss bay conditions and appropriate operational controls. These meeting must be summarised in writing (email) and acknowledged as understood by all relevant parties prior to being implemented.

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 placement 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 – Ballast water is managed in accordance with the Commonwealth's *Biosecurity Act 2015* and in compliance with Australian ballast water management requirements. Ballast water tanks on the Brisbane are filled with fresh potable water and are in sealed tanks, as such no exchange of ballast water will occur (unless required in an emergency situation). It is noted that the TSHD Brisbane holds and exemption certificate to the regulations of the IMO ballast water management convention.

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

Hopper Management – To reduce Biosecurity risks the hopper will be cleaned out prior to leaving the port, this will be done within the approved material placement area prior to leaving the port

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.

Biosecurity (Bio Foul) – The TSHD Brisbane is subject to a number of anti-fouling controls, including regular hull inspections and regular application of approved anti-fouling paints to the Hull.

8.1.1 General and Recycling Wastes

The *TSHD Brisbane* is fitted with one 3 m^3 general waste bin, one 1.5 m^3 paper waste bin, 4 x 240L comingled recycling bins and 2 x container bins 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 reprovisioning/crew-change operations.

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. • 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 prior to reaching 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 POTL 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.

8.1.2 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 monitoring indicates that the system is not treating the effluent to the standard required to enable its discharge as 'treated sewerage'. The system is designed to either discharge treated effluent automatically, or divert the effluent to a holding tank for later discharge. Until such time as the effectiveness of the sewerage treatment system can be improved and is proven to meet the required treatment standards, all effluent produced by the system is considered to be 'untreated' and is diverted to the holding tank and only discharged in a location that is designated for untreated sewerage discharge.

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 as far out to sea as reasonably practical, in appropriate locations to ensure compliance with relevant legislation (see **Appendix A** which includes a plan showing restricted locations for discharge of untreated sewerage for Townsville). • 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 completed by licensed contractor and disposed of at an appropriately licensed onshore facility 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 MEX.
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.

8.1.3 Hazardous and Regulated Wastes

Hazardous waste includes waste oils, oily water, oil sludge, chemicals and paints. The vessel is fitted with two 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.

Biodegradable greases will be used onboard the TSHD Brisbane on all equipment and parts that go in, above or near the water. It is noted that some machinery onboard can not be replaced with biodegradable grease, however this equipment is restricted to onboard machine rooms with no potential to release to the environment, grease for this machinery will be stored in designated locations.

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 is appropriately managed.
Actions	During at-sea operations: • All hazardous/regulated waste to be stored in appropriate manner and clearly marked in accordance with legislative requirements. • Where possible biodegradable greases will be used. Non biodegradable greases will be limited to equipment within machine rooms and stored in allocated locations. 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 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.

8.1.4 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** • Mufflers inspected and maintained as required. • 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 2008.* **Light** • All lighting to be inspected and maintained as required. • 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. • 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. POTL 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.

8.1.5 Turbidity Control

PBPL will ensure that the dredging operation minimises turbidity production 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 POTL 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	• Ensure dredging and material placement 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.). • Overflow dredging is to not occur in the Townsville's outer harbour and Platypus Channel unless operationally necessary. • If POTL light monitoring reports the persistence of low light conditions, additional controls within the Platypus Channel and Outer Harbour may need to be implemented. Additional controls may include overflow dredge restrictions, reduction of the use of jets during operation and planning of dredge runs around incoming and outgoing tides etc. Daily operations meeting will be held between PBPL and POTL representatives to dictate the days controls. Daily controls and operational notes must be in writing (email) and agreed and acknowledged by all parties prior to their implementation. • It is noted that daily operational meeting will only occur Monday to Friday during the campaign. Friday meeting will discuss the operations and controls that will be implemented during the weekend shifts (activities that will occur between the Friday meeting and the meeting on Monday morning). No changes to the discussed scope should occur during the weekend, any significant changes to the weekend scope will not occur unless received by all parties in writing and acknowledged by all parties.
Performance Indicators	No dredging or placement of material outside approved areas. Placement of material to be in the deeper section of the DMPA between the line of Port limits and the seaward edge of the DMPA coordinates: • 19°07'36" S and 146°56'51" E • 19°07'36" S and 146°58'51" E • Approx. 19° 8'9.90"S and 146°56'28.48"E (Point aligns with the Line of Port Limits) • Approx. 19° 9'3.90"S and 146°57'55.08"E (Point aligns with the Line of Port Limits) A 300m buffer from the outwards edge of the DMPA where material can not be placed is also included.
Monitoring	Review of vessel dredging and placement tracks against approved area boundaries. Equipment maintained as per MEX. POTL will monitor light conditions within Cleveland Bay and discuss the use of additional turbidity controls as needed.
Reporting	Reporting of turbidity incidents immediately to Vessel Master, Manager Dredging Operations and Environment Manager. POTL will be advised in accordance incident reporting protocol detailed in Section 9 of this EMP. Reporting by POTL of any turbidity issues identified by monitoring activities to Vessel Master. Location of dumping runs will be tracked and reported to ensure all dumping occurs within approved spoil ground
Corrective Action	Vessel Master to investigate the reason for any release of dredged material outside the nominated spoil ground and take appropriate action. POTL 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.

Element	Turbidity Management
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. POTL is responsible for determining if turbidity levels from the dredging works are exceeding acceptable levels and determining if corrective action is required.

8.1.6 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 and marine fauna incident report kit (Section 10.5). • Final suction at the dredge head will be minimised when not in contact with the sea bed. • Onboard personnel have completed PBPL Marine Fauna Observation Training within past 12 months • All crew to be familiar with the PBPL Marine Fauna Observation Procedure and response procedure (**Appendix D**) • Vessel watch personnel to maintain watch in high risk areas and take necessary action where risk of collision exists. Record all marine fauna observations, not just those required by permits below, for reporting to POTL • 20 minutes before commencing dredging, transport of dredge material to spoil ground or placement of dredge material at the spoil ground, the area within 300m from the vessel (the monitoring zone) shall be observed for the presence of marine species (e.g. whales or dugongs). • If marine species (e.g. whales, dolphins, dugongs and marine turtles) are observed within the monitoring zone, dredging, transport of dredge material to the spoil ground or placement of dredge material at the spoil ground may not commence for 20 minutes after the last marine species has been sighted within the monitoring zone, or the vessel has moved to another area of the disposal site where it can maintain a minimum distance of 300m between the vessel and any marine species • Record of all marine species observed within the 'monitoring zone' (300m radius of the vessel) on every run, and during placement activity (recording date, time and approximate distance from the vessel), records of no observations will also be kept. • In instances where marine fauna are observed outside of the monitoring zone, records should still be kept. Note that animal sightings outside of the monitoring zone do not impact operation, these records are for POTL records only. • **ANY turtles (or large marine animal) captured by the dredge should be kept until DES determines whether there is a need to keep the animal for examination.**
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.
Reporting	Reporting of exceptions immediately to Vessel Master, PBPL Marine Operations Manager and Environment Manager (including time, nature of incident, species involved - refer to **Appendix E** for additional details of marina fauna incidents). **This reporting requirement is irrespective of whether the fauna is dead or alive.** POTL 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 POTL to notify the regulator(s) within 24 hours, in accordance with the conditions of the sea dumping approval. Reporting of any marine fauna sightings outside of the monitoring zone to POTL.
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.

8.1.7 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, Environment Manager and POTL.
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 POTL in accordance the reporting protocol detailed in Section 9 of this EMP.
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.

8.1.8 Ballast Water Management

Ballast water is managed in accordance with the Commonwealth's *Biosecurity Act 2015* and in compliance with Australian ballast water management requirements. The *TSHD Brisbane* operates under an approved Ballast Water Management Plan and utilises only low risk Ballast water (fresh potable water) in sealed tanks, as such no exchange of ballast water will occur (unless required in an emergency situation). It is noted that the TSHD Brisbane holds and exemption certificate to the regulations of the IMO ballast water management convention.

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 (in Ballast Water Record Book) and review for non-conformances.
Corrective Action	Review procedure causing release and rectify immediately.
Term	During all operations.
Responsibility	Vessel Master.

8.1.9 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	Washdown of the deck and or dredge head shall only occur within the designated dredging or disposal areas (recorded in electronic log book). 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.

8.1.10 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 Port of Brisbane reclamation 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 or placement area. • Consideration of weather and current conditions prior to discharge in Dredge Material Placement Area.
Performance Indicators	No discharge of materials outside the designated hopper washing area (ie, dredge material 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. All details recorded in electronic log book.
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 Team as required.

8.1.11 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	• A Port of Townsville non-cargo liquid transfer permit to be submitted to POTL and approved prior to bunkering of fuel During land transfer • Bunkering procedure to be followed and confirmed (in vessel SMS) during bunkering of fuel • 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 (from the vessel at all times).
Reporting	Reporting of spills/leaks to Vessel Master in the first instance, then PBPL Marine Operations Manager and Environment team. Any spills to water require reporting to MSQ via a PoLREP
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.

8.1.12 Biosecurity (Anti-fouling)

The *TSHD Brisbane* is coated with an anti-foul paint on the hull of the vessel. The anti-fouling system has an international anti-fouling certificate and was applied to the vessel during a drydocking in December 2023. In addition, regular in water hull inspections are completed to ensure the integrity of the anti-foul system, and to assess risk of translocating introduced marine pests. Additional details on controls of introduced marine pests can be seen in section 10.

Element	Biosecurity
Objective/Target	To minimise the impacts of bio foul and minimise the risk of translocation of marine pests on the hull.
Actions	• Certified Anti-foul to be applied and maintained on the vessel hull • To complete an in water Hull inspection each year prior to leaving the Port of Brisbane to begin the northern dredging campaign • Complete an IMP risk assessment prior to arrival at POTL
Performance Indicators	Minmising risk of translocating marine pest
Monitoring	Monitor for active biosecurity incidents at ports or waters the TSHD Brisbane has called into
Reporting	Reporting of any suspect biosecurity incidents or suspected marine pests to PBPL environment team
Corrective Action	In the event of a biosecurity incident or suspected occurrence of a marine pest corrective actions will be determined
Term	During all operations.
Responsibility	All staff and onboard personnel, vessel master Fleet Manager

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 POTL and PBPL are adequately informed of incidents, or non-conformances with this EMP:

- The PBPL internal reporting system will be maintained; and
- POTL 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 POTL locations/staff:
     - POTL Control Tower [redacted] and
     - POTL Dredge lead [redacted] and by email to: POTL Maintenance Dredging management group [redacted]
  3. Incidents will be reported (verbally) to POTL as soon as practical, and within 24 hours.
  4. Written incident reporting will be communicated to POTL using the forms contained in **Appendix C** within three working days. These will be completed by the Vessel Master and forwarded by the PBPL DOM and/or EA. The DOM or EA will forward to POTL and maintain close liaison to ensure full information disclosure. The written report will be provided to the POTL Dredge Lead and the POTL Environment team on [redacted].

PBPL will assist POTL with any incident investigations and take actions as appropriate.

Any marine incidents are required to be reported to MSQ and / or AMSA as per statutory requirements.

10 Environmental Monitoring

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

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 POTL Manager Climate and Environment will be contacted and the course of action will be discussed. A copy of all complaints will be forwarded to POTL when the item has been closed.

Issues which are not directly related to the operation of the *TSHD Brisbane*, but are related to the Townsville dredging project will be forwarded to the POTL Manager Climate and Environment. 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 POTL.

Dredging Activity and Observations

The crew of the *TSHD Brisbane* will keep a record of dredging activity which will be forwarded to POTL daily during 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;
- records of any marine species observed and the person(s) undertaking the marine species observation;
- the person responsible for the vessel at any time during the dumping activity
- volume of fuel used in the project; and
- other pertinent observations as part of the standard vessel operating procedures.

No additional dredging, outside the scope of this EMP, will be completed during the campaign without prior written approval from PBPL.

Where possible biodegradable greases will be used. It is noted that some equipment onboard can not be operated with the use of biodegradable greases, this equipment is limited to machine rooms and non-biodegradable greases will be stored in allocated locations.

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.

Turbidity controls and daily operations will be discussed at daily operational meeting held between PBPL and POTL representatives, outcomes of the meeting will be given in writing (email) to all parties. Daily works and controls will be acknowledged as understood by all parties prior to implementation. It is noted that daily meeting will not occur on Saturday or Sunday, scope and controls for weekend works will be discussed during the Friday meeting.

The crew of the *TSHD Brisbane* will also undertake opportunistic visual observations of the dredge and placement areas. Should significant residual turbidity, this will be reported to the PBPL Site Representative for communication to the POTL Superintendents Representative.

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.

Protected Fauna

During loading and disposal operations observation and avoidance of marine species, including turtles, dugong and cetaceans (within the 300m 'monitoring zone' radius) will be made and any observations actioned as per Section 8.6. The observation records must include the name(s) of the person(s) undertaking the marine species observation for each run.

The recording of any marine species sighted outside of the 300m 'monitoring zone' to be noted/recorded for the Port's regular reporting requirements.

All THSD vessels are required to be fitted with turtle exclusion devices to minimize interactions and harm to marine turtles. Please see an extract below for the checking and use of such devices.

Extract from *Dredging and Dredged Material Management Plan* (2016), regarding '*TSHD Brisbane* - Procedure for Dredging with regards to Marine Turtles'

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.*

ANY turtles (or large marine animal) captured by the dredge should be kept until DES determines whether there is a need to keep the animal for examination.

Introduced Marine Pests

An Introduced Marine Pest (IMP) survey was undertaken on the Brisbane and the tender vessel on 20 March and 25 March 2025 respectively. The TSHD Brisbane was an in-water inspection with the tender vessel being a dry inspection.

The inspections of the vessels noted minor biofouling, but did not observe any species that pose a risk to Queensland and wider Australian waters.

PBPL track and monitor occurrences of introduced marine pests. In instances where a marine pests have been found at a port of call for the TSHD Brisbane additional controls will be introduced to minimise the risk of introducing pests to other ports. The white colonial sea squirt is of particular significance for the port of Townsville, as such additional information on this pest is available in **Appendix F**

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. 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.

Emergency contact details

Table 3 below contains emergency contacts details applicable to operations at the Port of Townsville.

Table 3: Emergency contact details

Reporting to	Contact Numbers
AMSA Marine Incident Reporting	
Mobile	[redacted]
Satellite	[redacted]
Maritime Safety Queensland	
Office	[redacted]
Harbour Master (Townsville)	
Office	[redacted]
VTS	[redacted]
Port Marine Services (Townsville)	
Office	[redacted]

Appendix A

Untreated Sewage Discharge Townsville

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, within1852m 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.

Appendix B

Environmental Approvals

Appendix B1 – Environmental Authority EPPR00771113

Appendix B2 – Tidal Works 1901-9462

Appendix B3 – Sea Dumping Permit SD2018-3942 variation 3

Appendix C

POTL Incident Report Form

Appendix D

PBPL Maintenance Dredging Marine Species Observation Procedure and Marine Fauna Incident Response Procedure

Appendix E

POTL Long Term Maintenance Dredging Management Plan

POTL Dredge Management Plan (Draft)

POTL 2025 TSHD Brisbane Operational Dredging Plan (Draft)

Appendix F

Port of Townsville Hazard Alert – White Colonial Sea Squirt