

# CAIRNS SHIPPING DEVELOPMENT PROJECT

## Revised Draft Environmental Impact Statement

### Chapter C3: Vessel Transport Management Plan





# TABLE OF CONTENTS

## CHAPTER C3: VESSEL TRANSPORT MANAGEMENT PLAN \_\_\_\_\_ I

C3.1	Project Overview.....	1
C3.2	VTMP(C) Overview .....	1
C3.3	VTMP(C) Purpose .....	1
C3.4	VTMP(C) Structure.....	2
C3.5	Site Location.....	2
C3.6	Marine Construction Activities and Vessels.....	7
C3.6.1	Dredging Works.....	7
C3.6.2	Navigation Aids and Wharf Upgrade Activities.....	11
C3.7	Navigation Measures During Construction .....	14
C3.8	Potential Vessel Interactions .....	14
C3.8.1	Activities .....	14
C3.8.2	Vessel Management Measures.....	14
C3.9	Cairns Port Procedures .....	16
C3.10	Strategies and Management Measures .....	16
C3.10.1	Responsibilities.....	16
C3.10.2	VTMP(C) Components Structure.....	17
C3.10.3	Implementation.....	21
C3.11	References .....	21

### List of Figures

Figure C3-1	Port Limit and Pilotage Areas (source MSQ).....	3
Figure C3-2	Proposed channel design.....	4
Figure C3-3	Northern Sands Dredge Material Placement Area configuration.....	5
Figure C3-4	Tingira St Dredge Material Placement Area configuration. ....	6

### List of Tables

Table C3-1	Proposed Dredging Methods.....	7
Table C3-2	Typical Vessels for Dredging Works .....	11
Table C3-3	Typical Vessels for Navigation Aids and Wharf Upgrade Works .....	13
Table C3-4	Vessel Management Measures for Marine Construction Activities .....	15
Table C3-5	VTMP(C) Components .....	17

### List of Photos

Photo C3-1	BHD Dredging and Loading into Hopper Barge.....	8
Photo C3-2	Example of a medium size TSHD. ....	9
Photo C3-3	Example of a pile driving equipment.....	12
Photo C3-4	Example of a work barge.....	12



## C3.1 Project Overview

Far North Queensland Ports Corporation Limited (trading as Ports North), with support from the Queensland State Government, initiated the Cairns Shipping Development Project (henceforth known as 'the project') to expand cruise ship tourism opportunities by allowing larger cruise ships to enter the Port of Cairns. The project will involve dredging portions of the inner port, outer channel and Crystal and Smith's Creek Swing Basins to increase the channels width and depth.

Ports North, as the port authority, will be responsible for developing and managing the project. The operation of the project will be under the same management structure. Other key stakeholders that will play a role in the development of infrastructure and the management of operations are:

- Maritime Safety Queensland (MSQ), a government agency of the Department of Transport and Main Roads and the Cairns Regional Harbour Master (RHM), who are the authority responsible for navigation safety in the Port of Cairns. The RHM was consulted to understand the requirements to be incorporated into this Vessel Traffic Management Plan (VTMP)
- Royal Australian Navy (RAN).

## C3.2 VTMP(C) Overview

This Vessel Transport Management Plan (Construction) – VTMP(C) - has been prepared to assess and manage impacts from the construction phase of the project (e.g. mobilisation, construction and demobilisation). This VTMP(C) addresses potential marine traffic and safety issues identified in relation to vessel operations and maritime works during the construction phase of the project.

The key maritime construction aspects of the project (including mobilisation, construction and demobilisation) that are relevant to this plan include:

- capital dredging by the Trailer Suction Hopper Dredge (TSHD) and Backhoe dredger (BHD) vessels
- the installation, operation and removal of a pump out mooring and pipeline for hydraulic placement of the dredge material at the Barron Delta DMPA (for material dredged by the TSHD)
- placement of dredge material at the Tingira Street DMPA (for material dredged by the BHD)
- Navigation Aids and Wharf Upgrade Works
- the operation of support vessels including survey and work boats.

**Chapter C4** (Maritime Operations Management Plan) has been prepared to assess and manage impacts from the operational phase of the project (e.g. post construction).

The other management plan closely associated with the VTMP(C) and applicable to the construction stage for marine works is the **Chapter C2** (Dredge Management Plan). The Dredge Management Plan identifies the preferred means of addressing environmental matters associated with the capital dredging works, whereas the VTMP(C) addresses navigational safety issues for all vessels during the construction phase.

Management of vessel traffic once the project construction commences will be controlled under Standard for Marine Construction Activities within Cairns Harbour by a Harbour Master's Direction under Section 86 of the *Transport Operations (Marine Safety) Act 1994*. This document will supersede and include the operations covered in the VTMP(C).

## C3.3 VTMP(C) Purpose

The construction phases of the project will generate marine traffic that has the potential to impact on vessel and marine safety and influence navigation.

The VTMP(C) is necessary to meet the requirements of applicable legislations, achieve best practice management of vessel traffic in relation to the project construction and to aid in achieving the requirements of both Ports North and the relevant authorities.

This plan describes the measures to be implemented during the construction of the project for monitoring and controlling vessel operations to achieve the following objectives:

- Provide practical and achievable plans for the management of construction vessel operations such that vessel safety is maintained and obstruction of navigation of other traffic is eliminated/minimised
- Provide Ports North and regulatory authorities such as MSQ with a framework to confirm compliance with requirements
- Provide a framework for the development of contractor specific VTMP(C) to be developed by the appointed contractors
- Provide the community with evidence and assurance that the management of construction vessels will be conducted in a manner that supports safe navigation for recreation vessels at all times.

This VTMP(C) will also be included as part of Ports North's tender documentation for selecting the preferred dredging and marine construction contractors following approval of the EIS and completion of the EIS process.

### C3.4 VTMP(C) Structure

The VTMP(C) has been structured to address the vessel operation requirements for the project construction as follows:

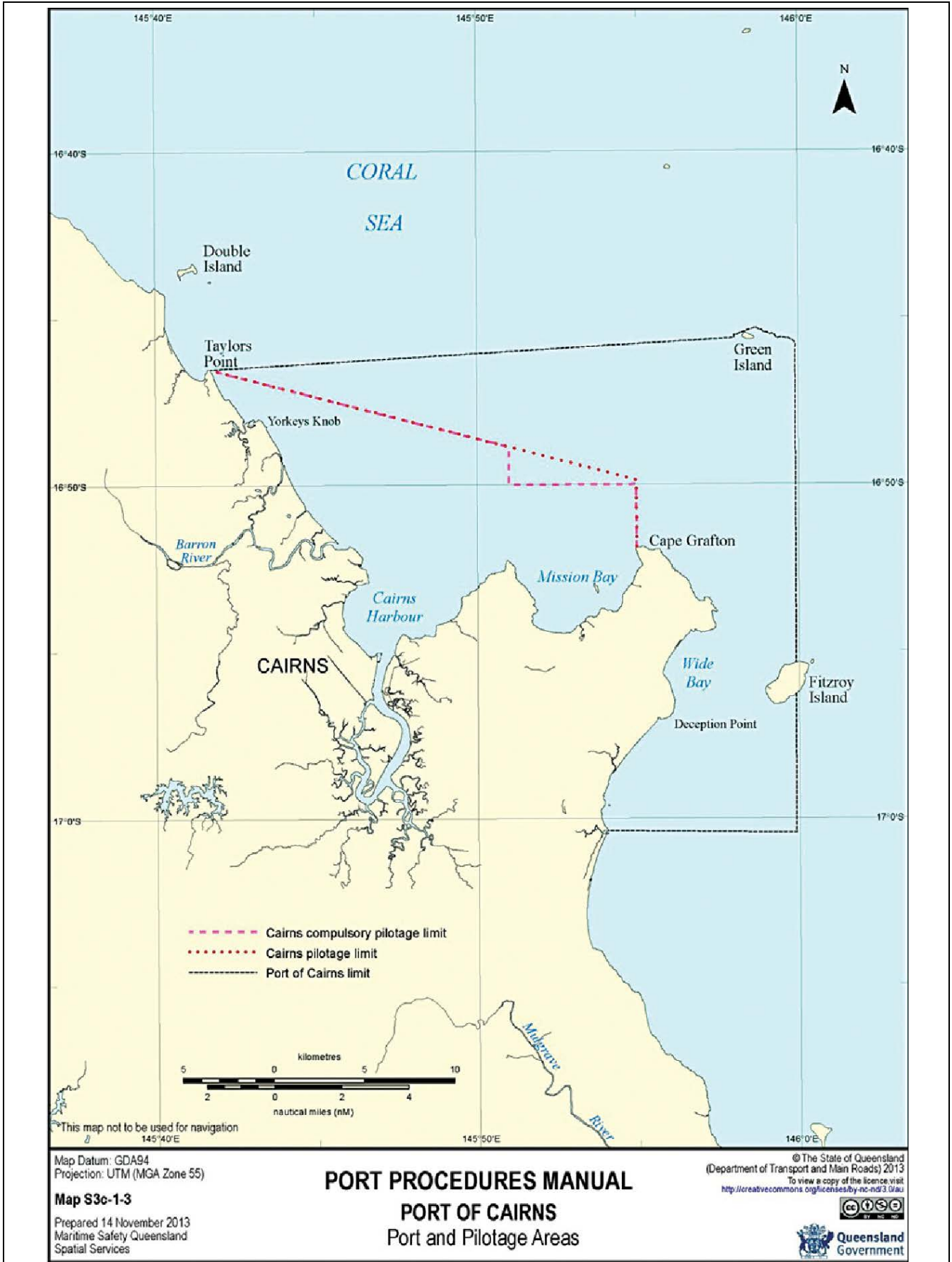
- description of the expected vessels and marine plants that will be used for the project construction
- vessel management measures to be addressed during the construction of the project
- overview of legislative requirements associated with construction vessel operations
- description of the roles and responsibilities for implementation of the VTMP(C)
- provide a framework for the development of contractor specific VTMP(C).

### C3.5 Site Location

The current Port of Cairns navigational channel extends into Trinity Bay, which forms part of the Coral Sea. Refer to **Figure C3-1** which shows the port limits and pilotage areas for the Port of Cairns. The construction of the project will be within the existing port limits that falls under the control of the Cairns RHM.

The Port of Cairns is situated on the western bank of Trinity Inlet, a mangrove-lined estuary adjacent to the city of Cairns, Queensland. The port lies on the eastern border of the Cairns CBD. The land immediately surrounding the port is a mix of industrial and commercial uses. There are a small number of residential apartments and short-term accommodation options in close proximity to the Cairns Cruise Liner Terminal (CCLT). There are also a number of people who live aboard boats moored in the inlet. The eastern bank of Trinity Inlet is lined with fringing mangroves and the distant hill slopes provide a green backdrop to the city of Cairns.

**Figure C3-2** shows the proposed channel design while **Figure C3-3** shows the proposed land-based Northern Sands Dredge Management Placement Area (DMPA) and associated infrastructure, and **Figure C3-4** shows the Tingira Street Stiff Clay DMPA.



**Figure C3-1** Port Limit and Pilotage Areas (source MSQ)

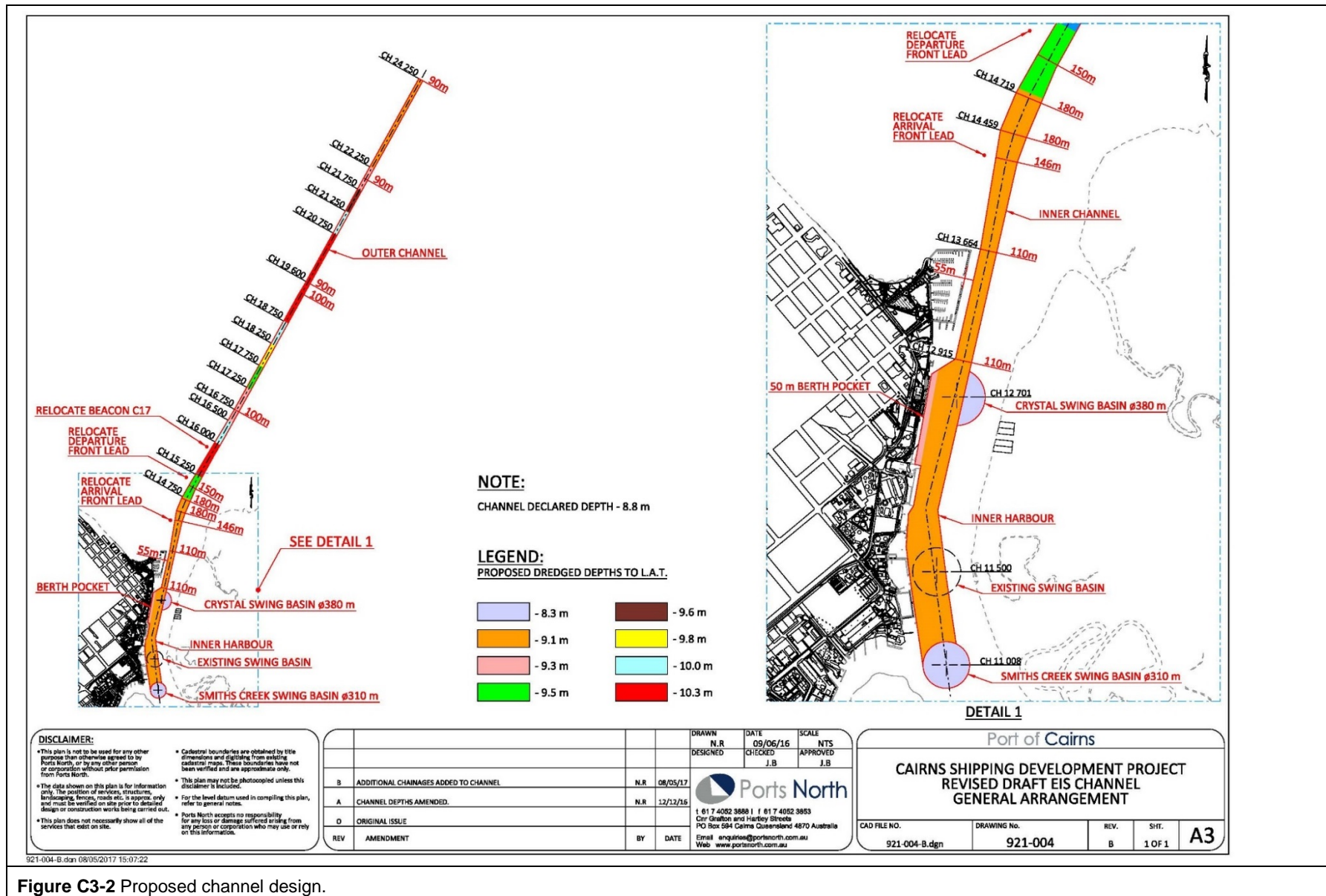
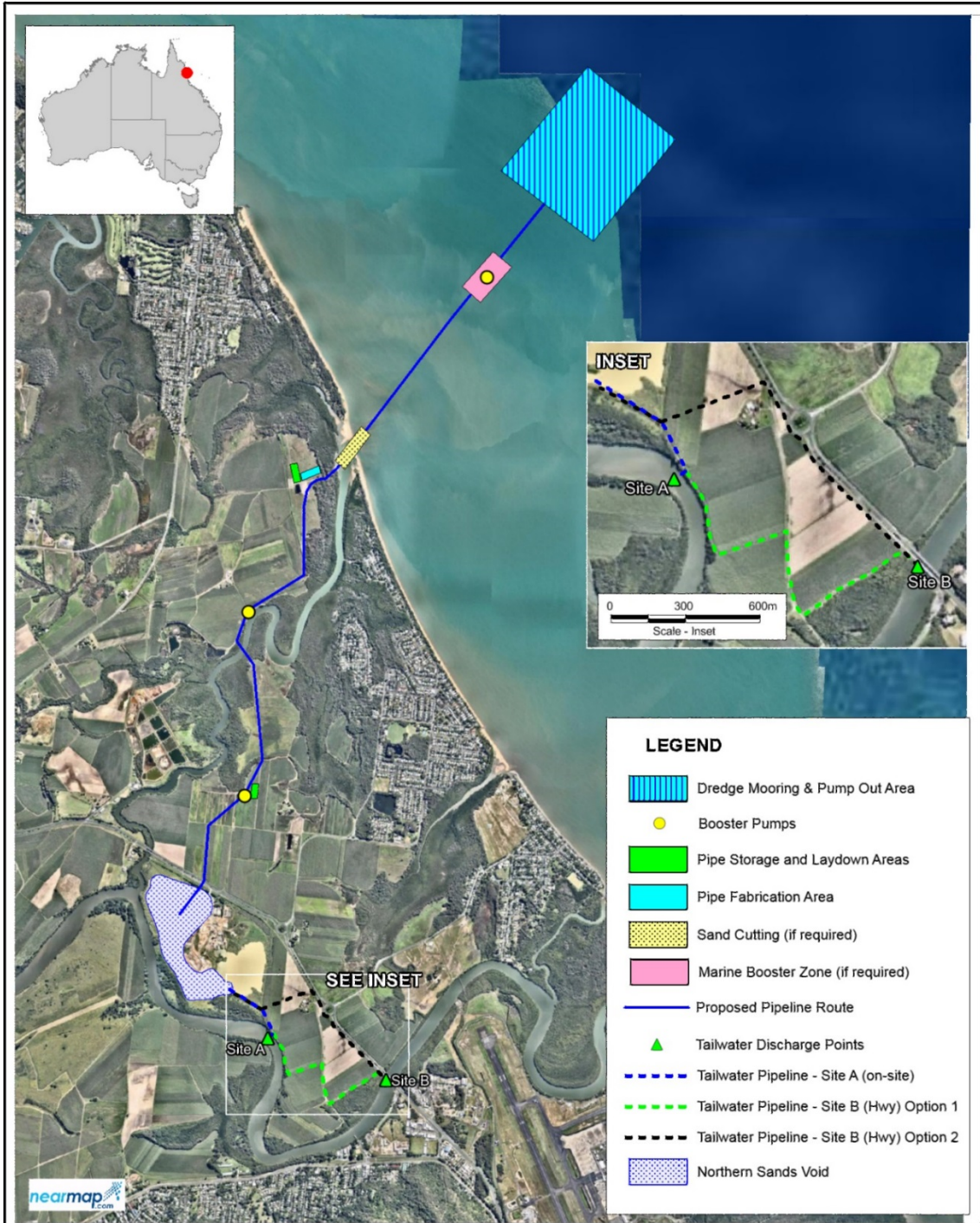


Figure C3-2 Proposed channel design.





Title:  
**Northern Sands Dredge Material Placement Configuration**

Figure:  
**C3-3**

Rev:  
**A**

BMT WBM endeavours to ensure that the information provided in this map is correct at the time of publication. BMT WBM does not warrant, guarantee or make representations regarding the currency and accuracy of information contained in this map.

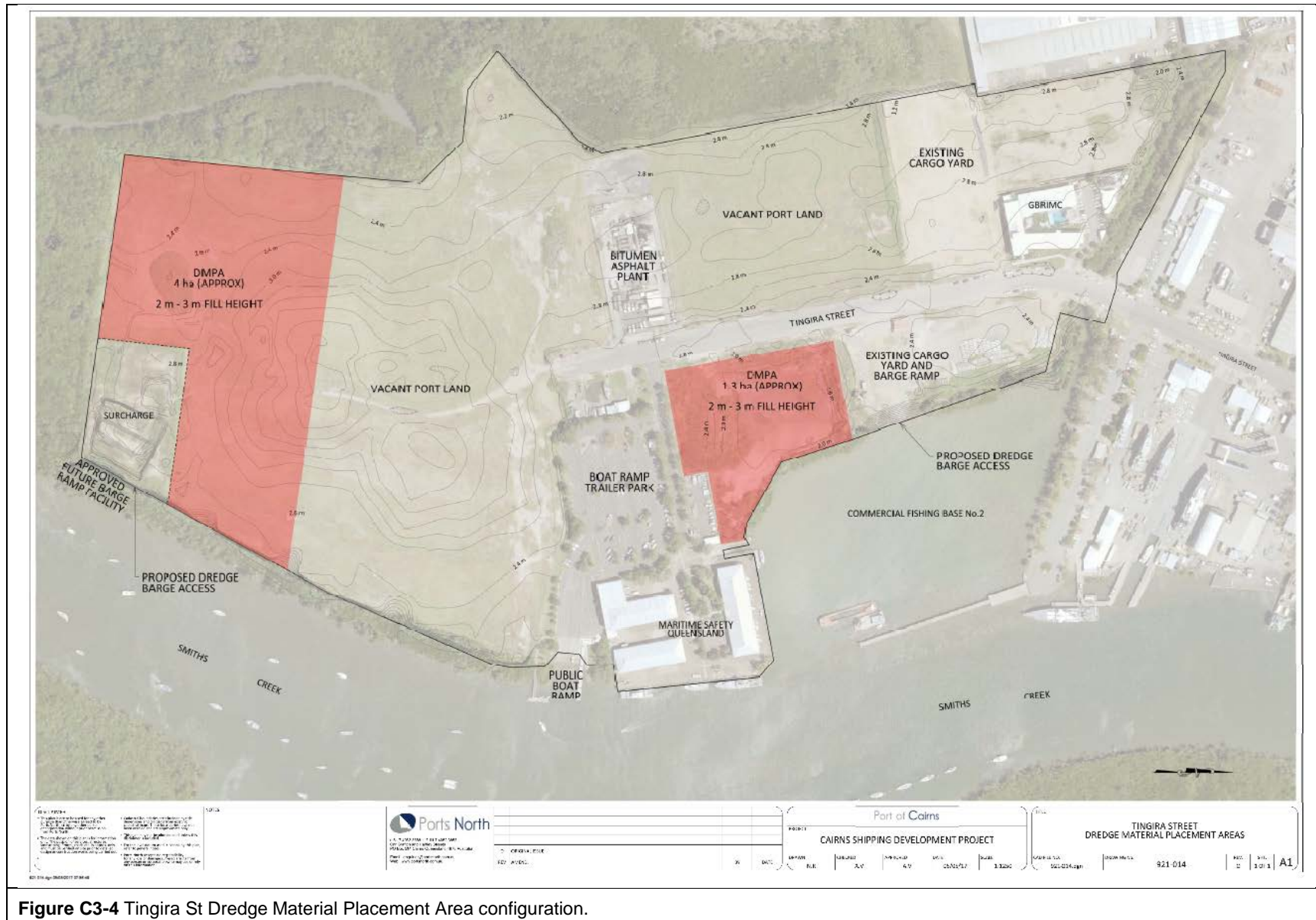


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**Figure C3-3** Northern Sands Dredge Material Placement Area configuration.



## C3.6 Marine Construction Activities and Vessels

Additional detail about the dredging and construction methodology can be found in Chapter A3. Summary details are provided in the sections following.

### C3.6.1 Dredging Works

Dredging works is to be undertaken for the project to widen and deepen the existing navigation channel and cruise shipping swing basin as well as to provide a new turning basin in the inner port. Two different dredging methods based on the sea bed material are proposed for the project which is summarised in **Table C3-1**.

**TABLE C3-1 PROPOSED DREDGING METHODS**

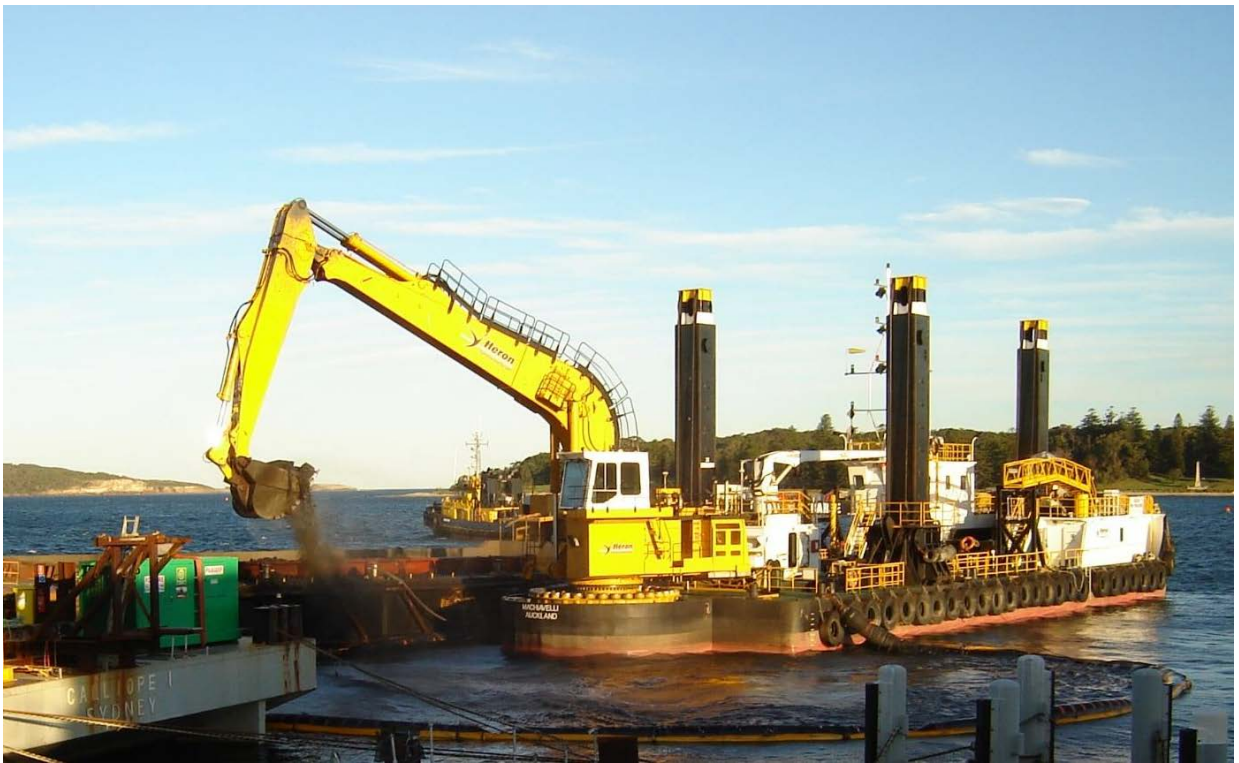
Sea Bed Material	Proposed Dredging Method
Firm to stiff clay in inner port and inner channel	Backhoe dredger (BHD) with barges and tug boats
Very soft to firm clay in outer channel and part of inner port	Trailing suction hopper dredger (TSHD)

#### C3.6.1.a Stiff Clay

For dredging of firm to stiff clay in the inner port area and parts of the channel, a medium-size BHD with ancillary vessels will be mobilised. A BHD is a mechanical dredger, similar to an excavator which is mounted on a barge. A BHD is a stationary dredger anchored by three or four spud piles. It works by dredging the seabed using the bucket at the end of the excavator arm and placing the dredged material into a hopper barge which is moored alongside for disposal at the preferred dredge material placement area. **Photo C3-1** shows a typical dredging operation of a BHD.

The dredging process of BHD will involve the following sequences:

- position BHD at the dredging area
- excavation using bucket fixed at the end of the excavator arm
- load the dredged material into a hopper barge or barge mounted skips moored alongside the BHD
- tug boat tows hopper barge when it is full to the Tingira Street DMPA
- barge mounted excavator(moored to shore) transfers material to heavy haulage vehicles for short hauling, then end dumping at placement site or transfer of skips to flat top haulage vehicles for dumping at placement sites
- tug boat tows hopper barge back to the BHD.



**Photo C3-1** BHD Dredging and Loading into Hopper Barge

### C3.6.1.b Soft Clay

In the outer channel and part of the inner port, a medium-size TSHD will be mobilised. TSHD is a self-propelled sea-going hydraulic dredger equipped with a hopper and dredging installations to fill and unload the hopper. The dredging takes place at the draghead on the seabed which is connected to a suction pipe to fill the hopper. Two sets of suction pipes and dragheads, one on each side of the TSHD, are used when dredging. The dredging process and hopper filling takes place while the TSHD is sailing along the dredged areas. The trailing speed during dredging is in the order of 1 to 2 knots. **Photo C3-2** shows a typical medium size TSHD.

The dredging process of TSHD involves the following sequences:

- position TSHD at the dredging area
- lower the suction pipe(s) with draghead at the end
- dredging at draghead and hopper filling simultaneously while sailing
- when the hopper is filled the dragheads are raised back onto the deck and the TSHD sails to the temporary mooring at the dredged material pump out site in Trinity Bay
- TSHD connects to the dredged material discharge pipeline at the temporary mooring and the dredged material is pumped as a slurry to the Barron Delta DMPA
- when the hopper is empty, and the pipeline has been pumped clean of solid material with water, the TSHD disconnects from the dredged material pipeline and mooring, and returns to the dredging area to recommence the cycle.



**Photo C3-2** Example of a medium size TSHD.

## Temporary Mooring and Pipeline Configuration

### Temporary Mooring

The configuration of the temporary mooring used at the pump out site will be dependent on the site conditions, the dredging contractor's plant and equipment, and will need to be determined in consultation with the Regional Harbour Master. Options may include:

- **Dolphins** - this arrangement uses (nominally 2) steel breasting dolphins to moor the vessel for the pump out operation. Each dolphin would consist of a number of steel piles driven into the seabed, interconnected by bracing. The dolphins would be equipped with bollards to accommodate spring lines, and fenders may also be used as an efficient means of energy absorption during berthing. In addition to the breasting dolphins, additional dolphins or anchor piles may be required to accommodate head and stern lines. Once the TSHD is secured in position the connection is made between to the dredged pipeline via its bow coupling. The dolphins can be temporary in nature and removed at the completion of the dredging program.
- **Barge Mooring** - mooring the TSHD to a barge provides an alternative means to hold the TSHD in position during the pump out operations. A large spud barge of similar size to the TSHD would be mobilised and positioned prior to dredging commencing. The spud barge maintains its position by deploying four or more large, vertical "spud poles" through its deck into the seafloor. The spud poles hold the barge in position and provide a safe working platform for the crew. The barge would be orientated in a position that best mitigates dominant sea conditions and the TSHD would be brought alongside and made fast to the barge using mooring lines. Once the TSHD is secured in position, the connection is made between to dredged pipeline via its bow coupling.
- **Anchor Mooring** - under this arrangement, the TSHD drops its anchor(s), or picks up chains, via floating buoys, to concrete anchor blocks placed on the seabed, prior to connecting to the floating line through its bow coupling. The TSHD may either swing on its anchor to suit the prevailing conditions, or otherwise use its dynamic positioning system to maintain position. As a result, the pump out station may need to be located further offshore to ensure sufficient draft is available for the dredge at all times. In considering whether the TSHD can discharge while at anchor, consideration will be given to prevailing site conditions and potential marine safety hazards in consultation with the Regional Harbour Master.

## Pipeline

The dredged material pipeline consists of a single pipeline nominally 1m internal diameter in size which will include some or all of the following components:

- floating line
- submerged pipeline and risers
- onshore pipeline.

For the Barron Delta DMPA, a small section of floating pipeline (e.g. up to 50 m) may be used to connect the riser to the TSHD depending on the type of mooring (see above).

A riser is a small section of flexible line used to bring a submerged line to the surface for connection to the floating line / connection point the seaward end. A small pontoon/buoy anchored to the seafloor is used to provide access to the surface end of the riser and to maintain its position.

The submerged line is the component of the pipeline that connects the riser line to the onshore pipeline. This submerged line is made from steel and is not typically anchored, as it filled with seawater and / or dredged material at all times and holds its position on the seafloor through its self-weight.

An array of potential work boats may be utilised for the installation, maintenance and removal of the pipeline between the dredge mooring point and the location at which it traverses the coast, and this will be subject to the detailed design phase and through determination by the contractor of most suitable vessels for such work. Land based plant and equipment may be utilised in conjunction with vessels to position the pipeline at the coastal crossing point. Regular work boat movements will be required along the pipeline to inspect pipeline integrity and for maintenance and reprovioning of the booster pump and dredge mooring point.

## Booster Pump

A booster pump is a very large, portable pump which is connected into the dredge pipeline to boost pumping pressure. Multiple booster stations can be connected in series when required, and they can be either land based or located offshore on barges.

It is expected that between 2 to 3 booster pumps will be required for dredging with disposal within the Barron Delta precinct. At this stage of project planning, the EIS make provision for the possibility of a marine booster as shown on Figure C3-2.

Floating booster stations are barged mounted and are towed to position before they are anchored to the seafloor. They are typically located close to the dredge and out of the surf zone. The booster pump station is connected either side to small lengths of floating line which are linked to the submerged line by risers.

## **Summary**

A summary of the likely marine equipment expected to be deployed during the project for the dredging works is provided in **Table C3-2**. Subject to approval, the dredging programme is anticipated to be undertaken during the 2019 dry season (May to October). Both dredge plant will seek to operate 7 days a week with 24 hour operations subject to weather, maintenance and environmental approval requirements.

While not overlapping, it is likely that the *TSHD Brisbane* will carry out maintenance dredging works shortly before the capital works are commenced so as to ensure any accrued maintenance dredge material in the channel is removed from the dredge footprint. The maintenance material will be placed at sea at the approved offshore dredge material placement area in accordance with current arrangements and permissions.

**TABLE C3-2 TYPICAL VESSELS FOR DREDGING WORKS**

Dredging Fleet	Construction Activity	Location	Indicative Duration on Site# (months)
<b>Main Vessels</b>			
1 x Medium BHD 2 x self-propelled hopper barges or 2 x hopper barges plus 1 tug boats	Dredge firm and stiff clay and relocate to Tingira Street DMPA.	Inner port and parts of the inner channel	~ 2 months (5-6 weeks) (excepting delays due to weather or maintenance)
1 x Medium TSHD	Dredge very soft to soft clay and firm clay and relocate to Barron River DMPA.	Outer channel and part of inner port.	~3 months (12 weeks) (excepting delays due to weather, maintenance and/or environmental requirements)
<b>Ancillary Vessels</b>			
1 x Survey boat	Hydrographic surveys.	All dredging areas	As per above
1 x Work boat	Support for all vessels.	All dredging areas.	As per above

# includes time for mobilisation and demobilisation

**Note:** the temporary mooring and dredge pipeline will need to be established prior to dredging works and as such would be expected to have an indicative duration of 6 months on site, taking into account mobilisation and demobilisation timing.

### C3.6.2 Navigation Aids and Wharf Upgrade Activities

The installation (or removal) of navigation aids and wharf upgrade works as part of the project will require the following marine plant:

- pile driving barge
- work barge or supply barge
- work boat as required to reposition the barge
- small vessel for transport of personnel.



**Photo C3-3** Example of a pile driving equipment.



**Photo C3-4** Example of a work barge.



A summary of the likely marine equipment expected to be deployed during the project for the installation (or removal) of navigation aids and wharf upgrade works is provided in **Table C3-3**.

**TABLE C3-3 TYPICAL VESSELS FOR NAVIGATION AIDS AND WHARF UPGRADE WORKS**

<b>Primary</b>	<b>Construction Activity</b>	<b>Location</b>	<b>Indicative Duration on Site# (months)</b>
<b>Main Vessels</b>			
1 x Piling barge	Pile driving (or removal) for navigation aids and wharf upgrade.	Navigation aids and wharf area.	6
1 x Work / supply barge	Delivery of pile and general construction support.	Navigation aids and wharf area.	7.5
<b>Ancillary Vessels</b>			
1 x Small tug / work boat	Support for piling barge and work / supply barge.	Navigation aids and wharf area.	7.5
1 x Crew boat	Transfer of construction workers from barges to landing point.	Navigation aids and wharf area, crew landing point.	7.5

# includes time for mobilisation and demobilisation

## C3.7 Navigation Measures During Construction

The use of marine equipment will generate vessel traffic during dredging and wharf upgrade works. This requires measures to be in place and implemented to manage risks, while maintaining safe navigation, support efficient port operations and reduce disruption to other vessel traffic and shipping activities. Navigation measures are to be managed and implemented in accordance with this VTMP(C) appropriate for the works undertaken. This section identifies the potential vessel interactions that will result from the dredging and wharf upgrade works and management measures to mitigate potential impacts.

## C3.8 Potential Vessel Interactions

### C3.8.1 Activities

The construction phase of the project will generate vessel traffic and marine based activities. If these activities are not appropriately managed, these movements have the potential to impact on vessel safety and obstruct the navigation of other traffic such as commercial shipping vessels, tug boats, pilot boats, navy vessels, and fishing and recreation vessels. An increase in construction vessel traffic will be generated, particularly by dredging works in the inner port.

Potential vessel interactions related to the construction activities will occur in the existing navigation areas in the port at the time of the works. The main potential vessel interactions generated from the project construction phase have been identified as follows:

- Dredging in the outer channel and inner port and concurrent shipping movements
- Dredging works for the development of a new swing basin in the inner port
- Transporting dredged material from dredging locations to the dredge pump out in Trinity Bay (for TSHD placement into the Barron Delta DMPA) and to the Tingira Street DMPA (for BHD placement operations) and returning to the dredging locations
- Piling barge for wharf upgrade and channel markers
- Work boats transporting personnel, assisting with coupling to the floating dredge pipeline, vessel supplies and materials
- Bunkering of dredging and construction vessels
- Tug boats used for manoeuvring dredging plant and barges
- Hydrographic survey of navigation areas associated with the dredging including the proposed pump out area
- Temporary mooring of vessels at existing port facilities, temporary structures or anchorage areas
- Vessels deployed to conduct monitoring (i.e. water quality sampling) or service environmental monitoring equipment as required for the Dredge Management Plan for the duration of works.

Concurrent movement of shipping and the dredge within the channel and inner port during dredge vessel operations will be managed (as is the present case) via communication between vessel masters and the Cairns Vessel Traffic Services (VTS) base at MSQ, whereby shipping movements (dependant on size and operation/movement requirements) are co-ordinated and allow complementary activity and optimisation of channel and inner port use.

### C3.8.2 Vessel Management Measures

Key management measures summarised in **Table C3-4** are in relation to the expected impacts of the project construction on vessel operations and navigation. These measures are to be implemented through the VTMP(C) addressed in Section C3.10.2 by Ports North and the appointed contractors in consultation with MSQ and the RHM. It should be noted that these management measures are in addition to that included in the Maritime Operations Management Plan (MOMP) – refer **Chapter C4** (Maritime Operations Management Plan).

**TABLE C3-4 VESSEL MANAGEMENT MEASURES FOR MARINE CONSTRUCTION ACTIVITIES**

Management Measure	Description
Safe vessel navigation	<ul style="list-style-type: none"> <li>• Safety of personnel to be addressed at all times.</li> <li>• All vessel crews are to be suitably qualified mariners.</li> <li>• All vessels and equipment are to be suitable for marine construction.</li> <li>• Address how shipping and port operations will be protected from construction activities.</li> <li>• Outline risk management for recreational boating and commercial vessels.</li> <li>• Confirmation of dredging works to the design depths by hydrographic surveys to MSQ standards.</li> </ul>
Vessel traffic management	<ul style="list-style-type: none"> <li>• Implement measures and consultation to prevent disruption to shipping movements.</li> <li>• Integrate dredging works with ship movements.</li> </ul>
Recreational & commercial boating and fishing craft	<ul style="list-style-type: none"> <li>• VTMP(C) to be developed by the appointed contractors to include boating safety, in particular:               <ul style="list-style-type: none"> <li>- temporary navigation aids for construction exclusion zones if required</li> <li>- issuance of notice to mariners</li> <li>- consultation with the boating community.</li> </ul> </li> </ul>
Mooring	<ul style="list-style-type: none"> <li>• Provide safe and secured mooring of construction vessels and floating equipment.</li> <li>• Temporary structures to be approved by the relevant authorities.</li> <li>• Mooring procedures to be in place for inclement weather and cyclones.</li> </ul>
Navigation aids	<ul style="list-style-type: none"> <li>• Temporary navigation aids to support safe navigation during construction and to demarcate exclusion zones if required.</li> </ul>
Pilotage during construction	<ul style="list-style-type: none"> <li>• Resources planning to address construction stage requirements.</li> <li>• Develop program for obtaining pilot exemption certificates.</li> </ul>
Port security	<ul style="list-style-type: none"> <li>• Adopt the Port of Cairns Port Security Plan during construction.</li> <li>• Develop appropriate communication procedures and protocols.</li> </ul>
Bunkering	<ul style="list-style-type: none"> <li>• Ensure that refuelling activities is undertaken safely and measures are in place to manage spill risks.</li> </ul>
Emergency management	<ul style="list-style-type: none"> <li>• Review port wide emergency management procedures for cyclones and extreme weather to cater for construction vessels and floating equipment.</li> <li>• Develop contractor's emergency management procedures for cyclones and extreme weather.</li> <li>• Review emergency response resources (equipment and personnel) during construction.</li> </ul>

## C3.9 Cairns Port Procedures

Port Procedures are published by MSQ. For the Port of Cairns, the procedures are documented in the Port Procedures and Information for Shipping Port of Cairns, (Maritime Safety Queensland, January 2014) (<http://www.msq.qld.gov.au/Shipping/Port-procedures/Port-procedures-cairns.aspx>). Under Section 86 of the *Transport Operations (Marine Safety) Act 1994*, the Harbour Master can give a general direction that applies to all ship owners, ship masters, ships, other persons or matters. The port procedures are mandatory and are regularly reviewed.

The Harbour Master will issue a Standard for Marine Construction Activities within Cairns Harbour which will detail requirements for vessels, operation and traffic control

## C3.10 Strategies and Management Measures

### C3.10.1 Responsibilities

#### C3.10.1.a EIS Regulatory Bodies

The VTMP(C) complements the main body of the EIS for the project. This VTMP(C) describes the specific management and mitigation measures to support safe, efficient and effective vessel operations in the port during the construction stages of the project.

The Standard for Marine Construction Activities within Cairns Harbour will be finalised at the conclusion of the EIS, taking into account comments on the EIS, it will provide a framework for the management of vessels operating in the port during the construction of the project.

#### C3.10.1.b Ports North

Ports North as the proponent of the project EIS is responsible for ensuring the project is designed and developed within the requirements of the EIS and approvals arising from the EIS process. Management actions will be put in place to support vessel operations in a safe manner and meet the requirements of applicable legislations.

Ports North will undertake tendering process and will oversee the construction of the project. Ports North will be responsible for managing contractors for works involving vessels, dredging equipment and marine plant.

#### C3.10.1.c Appointed Contractors

The appointed contractors for the dredging and marine infrastructure works of the project will develop specific Vessel Traffic Management Plans for their construction activities, consistent with this document and inclusive of any such approval conditions and outcomes of detailed design phase consultation with the RHM. This Standard for Marine Construction Activities within Cairns Harbour will regulate such plans, and be updated to reflect the specific vessels and construction methodologies.

### C3.10.2 VTMP(C) Components Structure

The components of the VTMP(C) are provided in **Table C3-5**.

**TABLE C3-5 VTMP(C) COMPONENTS**

Management Issue	Scope
VTMP(C) – Ports North	Outlines the VTMP(C) and its requirements for the development of the project to be managed and issued by Ports North in accordance with the Standard for Marine Construction Activities within Cairns Harbour.
VTMP(C) – Contractor	Specifies the VTMP(C) requirements and any procedures under the contract including the managing contracts involving dredgers, construction vessels or marine plant to be implemented by the appointed contractors.

#### C3.10.2.a Vessel Traffic Management Plan (Construction) – Ports North

This VTMP(C) will serve as a framework for the appointed contractors to prepare their own VTMP(C) – Contractor, specific to its construction vessels and operations. Ports North as the Principal will finalise the overall VTMP(C) in consultation with MSQ and the RHM to suit the marine construction works, intended contracting strategy and operational conditions at the time of project implementation.

This VTMP(C) will be updated for any changes to planned operations or construction methodology or the Port Procedures and Information for Shipping. The RHM shall be consulted in the preparation of each update.

Element	VTMP(C)
<b>Management objective</b>	<ul style="list-style-type: none"> <li>• Prepare, maintain, implement and monitor a VTMP(C) for the project.</li> </ul>
<b>Applicability</b>	<ul style="list-style-type: none"> <li>• Provides framework for the development and management of specific VTMP(C) – Contractor plans for the project.</li> </ul>
<b>Performance criteria</b>	<ul style="list-style-type: none"> <li>• Safe navigation and reduce risk of disruption for shipping</li> <li>• Safe navigation and reduce risk of disruption for boating including recreational, tourism and commercial fishing</li> <li>• Reduce risk of damage to infrastructure and aids to navigation</li> <li>• Vessel strike to marine fauna avoided or minimized to the greatest practical extent.</li> </ul>
<b>Monitoring and reporting</b>	<ul style="list-style-type: none"> <li>• Ports North to monitor the requirements of the VTMP(C) is adequate and incorporated into the specific VTMP(C) – Contractor plans developed for the project</li> <li>• Ports North in conjunction with the RHM will oversee the development of VTMP(C) – Contractor plans</li> <li>• Ports North to monitor the performance of the contractor plans against the VTMP(C).</li> </ul>
<b>Auditing</b>	<ul style="list-style-type: none"> <li>• Ports North to oversee construction activities to monitor contractor’s performance against the VTMP(C)</li> <li>• VTS to record non-conformance and incidents from marine construction activities.</li> </ul>
<b>Corrective action</b>	<ul style="list-style-type: none"> <li>• Review and revise the overall VTMP(C) to address any deficiencies identified during construction as a result of:               <ul style="list-style-type: none"> <li>- changes to planned operations or construction methodology</li> <li>- changes to the Port Procedures and Information for Shipping.</li> </ul> </li> <li>• The VTMP(C) – Contractor plans shall be updated for any changes required to the VTMP(C).</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>• Ports North with ongoing consultation with contractors, MSQ and RHM.</li> <li>• MSQ VTS to record non-conformance and incidents.</li> </ul>

<b>Management actions</b>
• Determine the allowable extent of working area.
• Determine the allowable extent, type and location of temporary structures.
• Specify requirements for temporary aids to navigation and demarcation of construction zones.
• Specific requirements for mooring and floating pipeline installation and decommissioning and removal
• Outline consultation requirements with regard to shipping activities.
• Outline consultation requirements with regard to recreational boating tourism and commercial fishing.
• Specify hydrographic survey requirements for depth measurements in navigation areas and pump out areas during and at the end of construction.
• Coordinate construction related traffic with environmental monitoring requirements.
• Specify methods for dealing with spilt material or obstructions in navigation waters.
• Identify resourcing levels for pilotage and pilot exemptions for the construction.
• Identify management measures for interfacing between contractors for works to be undertaken simultaneously under separate contracts.
• Specify limitations imposed to vessel operations and bunkering.
• Define the frequency and details of vessel movement schedules to be submitted by contractors.
• Define protocols for contractors interface with VTS and Ports North with regards to shipping movements.
• Define emergency planning requirements.
• Define port security requirements.

### **C3.10.2.b Vessel Traffic Management Plan (Construction) - Contractor**

The appointed contractors for dredging and marine construction works shall prepare and implement its plans in accordance with the requirements of the VTMP(C). The requirements of the VTMP(C) – Contractor plans will be outlined in the VTMP(C). The overall VTMP(C) does not replace any requirement for any regulatory documentation required by MSQ or the RHM.

The VTMP(C) – Contractor plans will be updated for any changes to planned operations or construction methodology or the Port Procedures and Information for Shipping. Ports North and the RHM shall be consulted in the preparation of each update and once complete, the contractor will submit each update to the RHM for approval.

The contractor will be responsible for identifying and obtaining approvals required under Queensland and Commonwealth legislation to undertake dredging and construction works.

Element	VTMP(C) - Contractor
<b>Management objective</b>	<ul style="list-style-type: none"> <li>• Prepare, maintain, implement and monitor a VTMP(C) – Contractor plans for dredging operations and marine construction works.</li> </ul>
<b>Applicability</b>	<ul style="list-style-type: none"> <li>• Contractors undertaking marine operations involving dredgers and marine equipment.</li> </ul>
<b>Performance criteria</b>	<ul style="list-style-type: none"> <li>• Safe navigation and reduce risk of disruption for shipping</li> <li>• Safe navigation and reduce risk of disruption for boating including recreational, tourism and commercial fishing</li> <li>• Reduce risk of damage to infrastructure and aids to navigation</li> <li>• Vessel strike to marine fauna avoided or minimised and reported to the greatest practical extent.</li> </ul>
<b>Monitoring and reporting</b>	<ul style="list-style-type: none"> <li>• The contractor shall consult with the RHM and submit specific Look Ahead Work Schedules for approval. These schedules, to be approved by the RHM, shall specifically include and describe the following:               <ul style="list-style-type: none"> <li>- Location, activities and program for the works (i.e. include expected routes)</li> <li>- Number and type of construction vessels greater than 35m LOA to be deployed</li> <li>- Number and type of construction vessels less than 35m LOA to be deployed</li> <li>- Consideration of shipping schedules, and port operating hours to ensure that impacts on peak operational periods are minimised</li> <li>- Weather and/or night time constraints</li> </ul> </li> <li>• Contractor is to develop VTMP(C) – Contractor plans in line with the VTMP(C) and report back on performance</li> <li>• Contractor to report back on VTMP(C) – Contractor plans at construction progress meetings including for those items required by the VTMP(C)</li> <li>• VTS to record non-conformance and incidents from marine construction activities.</li> </ul>
<b>Auditing</b>	<ul style="list-style-type: none"> <li>• Contractor is to monitor and audit the progress of the VTMP(C)               <ul style="list-style-type: none"> <li>- Contractor plans as part of the quality assurance plan including for those items required by the VTMP(C)</li> </ul> </li> <li>• Ports North shall monitor contractor's performance against the VTMP(C)               <ul style="list-style-type: none"> <li>- Contractor plans in consultation with RHM and MSQ.</li> </ul> </li> </ul>

<b>Management actions – Preparing a VTMP(C) – Contractor</b>	
<ul style="list-style-type: none"> <li>Comply with the requirements of the VTMP(C)</li> <li>Consult with Ports North, RHM, MSQ and other relevant regulatory authorities in preparing and updating the VTMP(C) – Contractor plans</li> <li>Consider the requirements of Port Procedures and Information for Shipping – Cairns.</li> </ul>	
<b>Management actions – The VTMP(C) – Contractor shall include the following:</b>	
<ul style="list-style-type: none"> <li>Protection and management of shipping and port operations</li> <li>Protection and management of recreational and commercial fishing craft</li> <li>Protection of existing port structures and assets including existing navigation aids/markers</li> <li>Pilotage requirements and program for obtaining pilotage exemption certificates as appropriate</li> <li>Workplace health and safety requirements</li> <li>Induction and training procedures</li> <li>Site security and compliance with the Maritime Security Plan for the Port of Cairns</li> <li>Communication protocols and procedures with Ports North, RHM, VTS and other parties</li> <li>Temporary marine structures and navigation aids</li> <li>Bunkering and refuelling procedures</li> <li>Maintenance of construction vessels</li> <li>Emergency procedures (including cyclone and extreme weather contingency plans).</li> </ul>	
<b>Management actions – Details of construction vessels:</b>	
<ul style="list-style-type: none"> <li>The vessel name, registration, dimensions, draft, tonnage, lifting capacity, etc.</li> <li>Valid Certificate of Survey or a valid permit issued by MSQ pursuant to the <i>Transport Operations (Maritime Safety) Act 1994</i></li> <li>Description of how each vessel will be crewed, operated and used for the project.</li> </ul>	
<b>Corrective action</b>	<ul style="list-style-type: none"> <li>Contractor to revise the VTMP(C) – Contractor plans to reflect any deficiencies identified during construction from               <ul style="list-style-type: none"> <li>changes to planned operations and construction methodology</li> <li>changes to the Port Procedures and Information for Shipping</li> <li>any directive from Ports North, RHM or MSQ.</li> </ul> </li> <li>Contractor to prepare plan in consultation with Ports North, RHM and MSQ</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>Contractor to conduct vessel operations in accordance with the approved VTMP(C)</li> <li>Ports North to monitor contractor's performance against VTMP(C) in consultation with RHM and MSQ</li> <li>MSQ VTS to record non-conformance and incidents.</li> </ul>



### **C3.10.3 Implementation**

#### **C3.10.3.a Preparation and Approvals**

The appointed contractors will prepare specific procedures for their work packages that meet the requirements of this VTMP(C) and in accordance with the requirements of any Queensland and Commonwealth Government approval permits and conditions.

The contractors also shall include the requirements of Ports North, MSQ and the RHM.

#### **C3.10.3.b Operations and Monitoring**

Each contractor, involved in the construction of the project using vessels or marine equipment will be responsible for:

- liaising with vessel crews to implement and monitor the VTMP(C) – Contractor
- complying with the provisions of the VTMP(C) – Contractor
- carrying out regular inspection and monitoring activities to ensure adherence to proper marine safety measures.

#### **C3.10.3.c Reporting**

Each contractor involved in the construction of the project will be responsible for establishing a VTMP(C) file folder that contains necessary documentation pertaining to vessel traffic management, particularly the latest and approved version of the VTMP(C).

The folder should also contain monitoring data and information in relation to the management of the VTMP(C).

#### **C3.10.3.d Review, Update and Improvement of VTMP(C) - Contractor**

A copy of the latest approved VTMP(C) – Contractor will be kept on-site by the contractor for the duration of the works and be easily accessible.

During the works, Ports North would also hold a copy of the latest approved version of the VTMP(C) and the contractor- specific VTMP(C) plans. The VTMP(C) – Contractor plans will be regularly reviewed in relation to conditions encountered and updated as appropriate.

The RHM will be consulted for the review and update of the VTMP(C) – Contractor.

## **C3.11 References**

Maritime Safety Queensland, 2014. Port Procedures and Information for Shipping Port of Cairns, Townsville, Maritime Safety Queensland.

