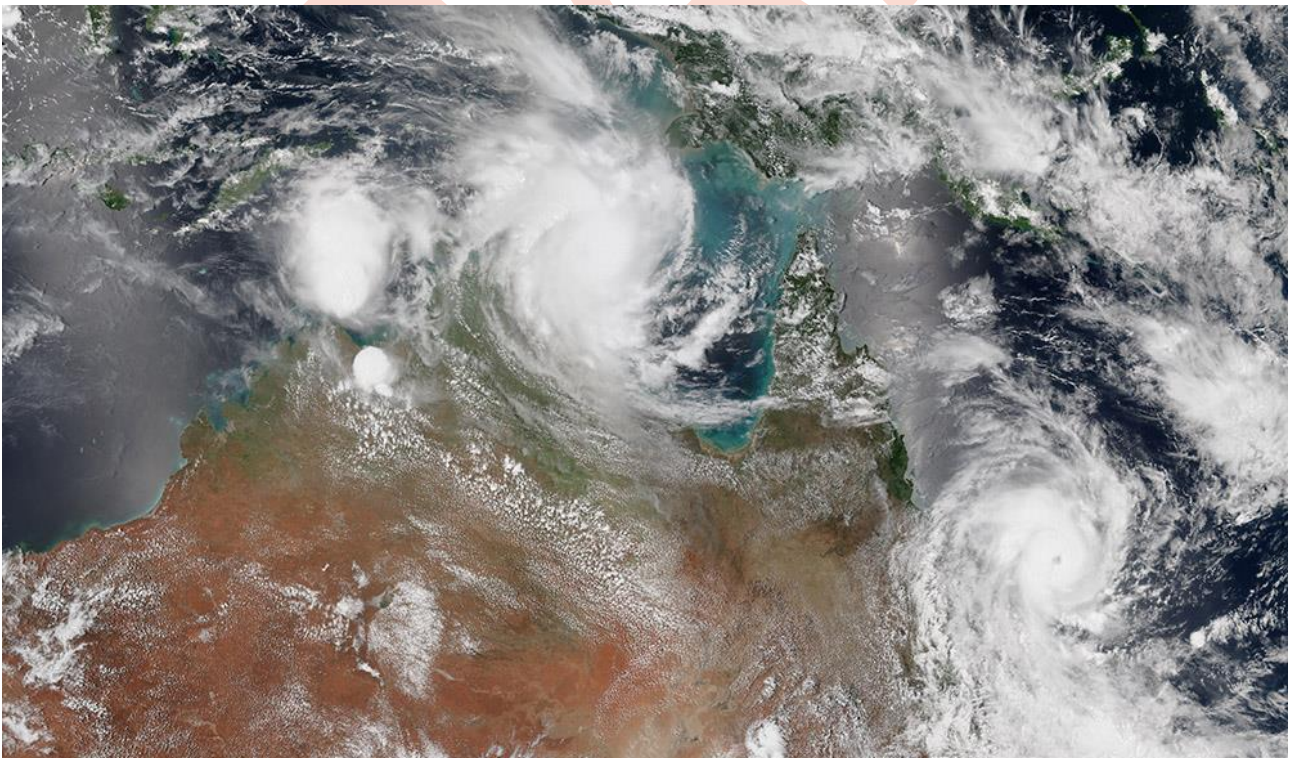


Cyclone Procedure 2020-2021



DARWIN PORT – CYCLONE PROCEDURE 2020 – 2021 SUMMARY

STAGE	DESCRIPTION	DP ACTIONS	PORT STATUS
Pre-season	Preparation for forthcoming Cyclone Season	Cyclone procedure and Standard Operating Procedures reviewed and updated. Port users informed of cyclone precautions. Revised Cyclone Procedure distributed to staff and stakeholders.	Open
Stage 1	Cyclone Watch (48 Hours)	Actions as per Stage One requirements in Cyclone Procedure. Standard Operating Procedures completed by relevant staff members. Ships placed on four hours' notice of readiness.	Open Initial planning for closure activated
Stage 2	Cyclone Warning (24 Hours)	Actions as per Stage Two requirements in Cyclone Procedure. Key staff report to designated work areas. Standard Operating Procedures completed by relevant staff members. Ships placed on one hour's notice of readiness. Vessels may leave of their own accord.	Open but under review GMO may action procedure to close the Port
Stage 3	Cyclone Warning (12 Hours)	Actions as per Stage Three requirements in Cyclone Procedure. Standard Operating Procedures completed by relevant staff members. All equipment secured. Essential service vessels taken to designated cyclone refuges. Vessels to leave port or proceed to designated cyclone moorings or havens.	Assessed depending on severity and impact
Stage 4	Safety Management and Lock Down Destructive winds imminent	All staff leave worksite and take shelter as directed by the CEO.	Assess depending on severity and likely impact
Stage 5	Destructive winds impact Darwin	All staff remain in shelters.	Assessed depending on severity and likely impact
	All Clear Pending	Key personnel report to allocated work areas. Preparation for declaration of all clear. Plan for opening of Port agreed and communicated to stakeholders.	Assessed depending on severity and likely impact
Stage 6	All Clear	All staff report to work once it is safe to do so. Damage assessment commenced. Harbour safety assessed.	Open with caution
	Post Cyclone Recovery	Staff availability confirmed. Communication systems re-established. Equipment damage reports completed. Damage mitigation actioned.	Open with caution
	Stand Down	Cyclone damage mitigation completed. Debrief of cyclone response. Cyclone Procedure updated where necessary.	Open

Revision no:	10	Review date:	142/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	30/10/19	Next review:	08/20	Authorised by:	GMO/CEO	Page 2 of 42

TABLE OF CONTENTS

DARWIN PORT – CYCLONE PROCEDURE 2019 – 2020 SUMMARY	2
INTRODUCTION	5
ENDORSEMENT AND APPROVAL	6
DOCUMENT CONTROL.....	7
VERSION CONTROL.....	8
DISTRIBUTION.....	9
GLOSSARY	10
TROPICAL CYCLONE SEASON	11
TROPICAL SEVERE THUNDERSTORMS	11
DP CYCLONE MANAGEMENT STRUCTURE.....	11
NOTIFICATION OF CLOSURE OF SCHOOLS.....	13
NOTIFICATION OF CLOSURE OF DARWIN PORT OFFICES.....	13
KEY STAKEHOLDERS.....	13
RESPONSIBILITY OF SHIP’S MASTERS AND OWNERS.....	14
DARWIN PORT MARINE PILOTS	14
VESSEL TRACKING	14
COMMUNICATION.....	15
COMMUNICATION METHODS	16
MEDIA MANAGEMENT	17
WEATHER FORECAST MONITORING.....	17
TROPICAL CYCLONE SEVERITY CATEGORIES.....	17
TROPICAL CYCLONE SERVICES	18
STORM SURGE	19
DP CYCLONE MANAGEMENT CONSIDERATIONS.....	20
DP CYCLONE MANAGEMENT STAGES	21
PRE-SEASON READINESS.....	22
STAGE ONE – CYCLONE WATCH (48 HOURS)	23
STAGE TWO – CYCLONE WARNING (24 HOURS)	25
STAGE THREE – CYCLONE WARNING (12 HOURS).....	27
STAGE FOUR – SAFETY MANAGEMENT AND LOCKDOWN	28
STAGE FIVE – DESTRUCTIVE WINDS REACH GREATER DARWIN	28
ALL CLEAR PENDING	29
STAGE SIX – ALL CLEAR	30

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 3 of 42

POST EVENT RECOVERY	30
STAND DOWN.....	31
APPENDIX 1: - CONTACT DETAILS.....	32
APPENDIX 2 - CYCLONE REFUGES.....	38
APPENDIX 3 - DP RADIO CALL SIGNS	39
APPENDIX 4 - VHF CHANNELS.....	40
APPENDIX 5: - STORM SURGE INUNDATION 2014	41
APPENDIX 5: - STORM SURGE INUNDATION 2014 cont.	42

DRAFT

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 4 of 42

INTRODUCTION

The Darwin Port Cyclone Procedure sets out Darwin Port Operations Pty Ltd (DP) authorities and responsibilities for the management of the harbour infrastructure, vessels in the harbour, its tenants and staff during a cyclone event.

The objectives of the Cyclone Procedure are to:

- a) Minimise risk to life and property
- b) Minimise the risk of damage to the Port of Darwin infrastructure
- c) Optimise the use of Darwin Harbour cyclone refuge areas
- d) Contribute effectively to the Northern Territory response to a cyclone event

This Cyclone Procedure has been developed in consideration of the [Territory Emergency Plan](#)

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Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 5 of 42

ENDORSEMENT AND APPROVAL

The Darwin Port Cyclone Procedure 2020 – 2021 is endorsed by:

General Manager Operations Date: TBC

The Darwin Port Cyclone Procedure 2020 – 2021 is approved by:

Chief Executive Officer Date: TBC

Cyclone Procedure will be finalised following inclusion of any amendments arising out of pre-season exercises.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 6 of 42

DOCUMENT CONTROL

The Darwin Port Cyclone Procedure is a controlled document.

Should the reader become aware of any inaccuracies, corrections or changes that are required, they should photocopy this page and the relevant page(s) from the procedure that require changes, note the changes and e-mail to:

General Manager Operations Darwin Port

Email: ian.niblock@darwinport.com.au

Name:

Position:

Organisation:

Document No:

Phone:

Email:

Please note the required changes to the following pages:

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 7 of 42

VERSION CONTROL

Version	Date	Position	Name	Reason for Amendment
0.1	25/08/12			2012/13 – Review and Update
0.2	25/08/12			Telephone numbers and Call Signs update
1.0	29/10/12			CEO Approved
1.1	9/09/13			2013/14 – Review and Update
1.2	20/9/13			Telephone numbers and Call Signs update
1.3	25/9/13			Desktop Exercise
1.4	1/10/13			Update
1.5	2/10/13			PMG Endorsed
2.0	9/10/13			CEO Approved
2.1				Incorporating OCPE <i>Employment Guidelines during a Cyclone</i>
2.2	19/09/14			2014/15 – Review and Update
2.3	25/09/14			Telephone numbers and Call Signs update
2.4	07/10/14			PMG Endorsed
2.5				SOP Update
3.0				CEO Approved
3.1	16/10/15			2015/16– Review and Update
3.2	22/10/15	PMG	PMG	PMG Endorsed
3.3	22/10/15	CEO	Terry O'Connor	CEO Approved
3.4	26/09/16	MSM	Matthew Wheeler	2016/17 Review and Update
3.5	10/16	GMO	Ian Niblock	Content Review
3.6	17/10/16	GMCS	Melissa Reiter	QA Content
3.7	17/10/16	GMO	Ian Niblock	Endorsed
3.8	17/10/16	PMG	PMG	PMG Endorsed
4.0	18/10/16	CEO	Terry O'Connor	Approved
4.1	18/09/17	DOM	Gary Bawden	2017/18 review and update
4.2	22/09/17	WH&SM/ENVM	Katie Brown /David McMaster	2017/18 review
4.3	27/10/17	GMO	Ian Niblock	Post internal and external exercises update
4.4	31/10/17	PMG	PMG	PMG endorsed
4.5	31/10/17	GMO	Ian Niblock	QA check and endorsed
5.0	31/10/17	CEO	Terry O'Connor	Approved
5.1	16/11/17	GMO	Ian Niblock	Move DG container assessment from Stage 2 to Stage 1
5.2	16/11/17	GMO Admin.	Amanda McCourt	Update DMS contact details to reflect
6.0	16/11/17	CEO	Terry O'Connor	Approved
6.1	14/8/18	DOM	Gary Bawden	2018/19 review and update
6.2	25/9/18	Cargo Supervisor	John Horwood	Cont. 2018/19 review and update document and stakeholder contact

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 8 of 42

6.3	4/10/18	GMO	Ian Niblock	Review, acceptance of amendments and QA review
6.4	25/10/18	DOM	Gary Bawden	Post exercise amendments
6.5	25/10/18	GMO	Ian Niblock	Review & acceptance of amendments
6.6	30/10/18	PMG	PMG	PMG Endorsed
7.0	30/10/18	CEO	Terry O'Connor	Approved
7.1	20/12/18	Executive Assistant	Alleen Breward	Update contact details
8.0	20/12/18	CEO	Terry O'Connor	Approved
8.1	02/05/19	DOM	Gary Bawden	2019/20 Review and update
8.2	05/09/19	GMO	Ian Niblock	Review & acceptance of amendments
8.3	18/10/19	DOM & GMO	Gary Bawden/Ian Niblock	Post internal exercise amendments
8.4	28/10/19	PMG	PMG	PMG Endorsed
9.0	30/10/19	CEO	Darren Lambourn	Approved
9.1	14/8/20	SMMS	Gary Bawden	2020/21 Review and update
9.2	14/08/20	GMO	Ian Niblock	Elaborate cyclone operations considerations and communications

DISTRIBUTION

An electronic link will be sent to all stakeholders identified in this document before the start of the Cyclone Season.

The DP Cyclone Procedure is available to download from the DP website:

<https://http://www.darwinport.com.au//facilities-services/emergency-cyclone-plans>

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 9 of 42

GLOSSARY

AB	Admin Building
BOM	Bureau of Meteorology
BSM	Business Systems Manager
CDC	Counter Disaster Council
CFO	Chief Financial Officer
CEO	Chief Executive Officer
CEO EA	Executive Assistant
CMT	Crisis Management Team
COM	Cargo Operations Manager
CWM	Cyclone Worksite Managers
DAWR	Department of Agriculture and Water Resources
DCM	Department of the Chief Minister
DCO	Duty Cargo Officer
DIPL	Department of Infrastructure, Planning and Logistics
DLNG	Darwin LNG
DP	Darwin Port
EAAB	East Arm Administration Building
EAW	East Arm Wharf
EAWG	East Arm Wharf Gatehouse
EAWWS	East Arm Wharf Workshop
EADC	East Arm Operations Buildings (Demountable City)
ECMP	Emergency Crisis Management Plan
EM	Environmental Manager
FHW	Fort Hill Wharf
GMBSS	General Manager Business Support Services
GME	General Manager Engineering
GMF	General Manager Facilities
GML	General Manager Legal
GMO	General Manager Operations
GMPD	General Manager Port Development
HCO	Harbour Control Officer
HCC	Harbour Control Centre
IC	Incident Controller
ICT	Information & Communications Technology
ILNG	INPEX LNG and INPEX LPG and Condensate
IMT IC	Incident Management Team - Incident Controller
MM	Maintenance Manager
MSG	Maritime Security Guard
NTG	Northern Territory Government
NTES	NT Emergency Services
NTPFES	NT Police, Fire and Emergency Services
OOW	Officer of the Watch (Ships Officer)
PB	Pilot Boats
PBM	Pilot Boat Master
PE	Port Engineer
PMO	Port Management Officer
RHM	Regional Harbourmaster
SHW	Stokes Hill Wharf
SLO	Superintendent Landside Operations
SMMS	Senior Manager Marine Services

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 10 of 42

TC	Tropical Cyclone
TRS	Tropical Revolving Storm
SMWHSES	Senior Manager WHSES
WHSFO	Work Health and Safety Field Officer
WS	Wharf Services
WSM	Wharf Services Manager

TROPICAL CYCLONE SEASON

The official tropical cyclone season for Darwin and the Northern Territory commences on 1 November and concludes on 30 April annually. However, cyclones have been known to occur outside of the official season.

Before a tropical cyclone forms it is difficult to predict its potential strength and path, including whether it will make landfall. Along the north coast of Australia more than half of the cyclones impact the coast.

TROPICAL SEVERE THUNDERSTORMS

The tropical cyclone season in Northern Australia is also known as the wet season, which has its own distinctive tropical climate, quite different from what is to be experienced further south. Similarly, the types of violent thunderstorms that occur during the wet season can have different characteristics to those typical of southern and central Australia.

The main severe weather types associated with thunderstorms in the tropics are damaging wind and heavy rainfall. The wind gusts are "straight line gusts", that is, not associated with the rotating winds within a tornado, but due to the outflow from the downdraught of a thunderstorm as the air hits the ground and spreads out. The name given to an intense thunderstorm downdraught concentrated on a small area is a microburst.

Microbursts can occur at any time during the wet season and often with little or no warning. Typical weather associated with microbursts include:

- **Damaging wind** – 90km/h or greater
- **Tornadoes**
- **Heavy rainfall** conducive to flash flooding

DP CYCLONE MANAGEMENT STRUCTURE

Overall response coordination for a cyclone event in Darwin rests with the Northern Territory Emergency Services.

Cyclone events will be managed using a methodology consistent with the DP ECMP. However, given that cyclone events are usually predicted many hours before their consequences are felt, management tends to

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 11 of 42

be more measured and aimed at preparing for the impact. Recovery from the impact will be managed in accordance with the ECMP.

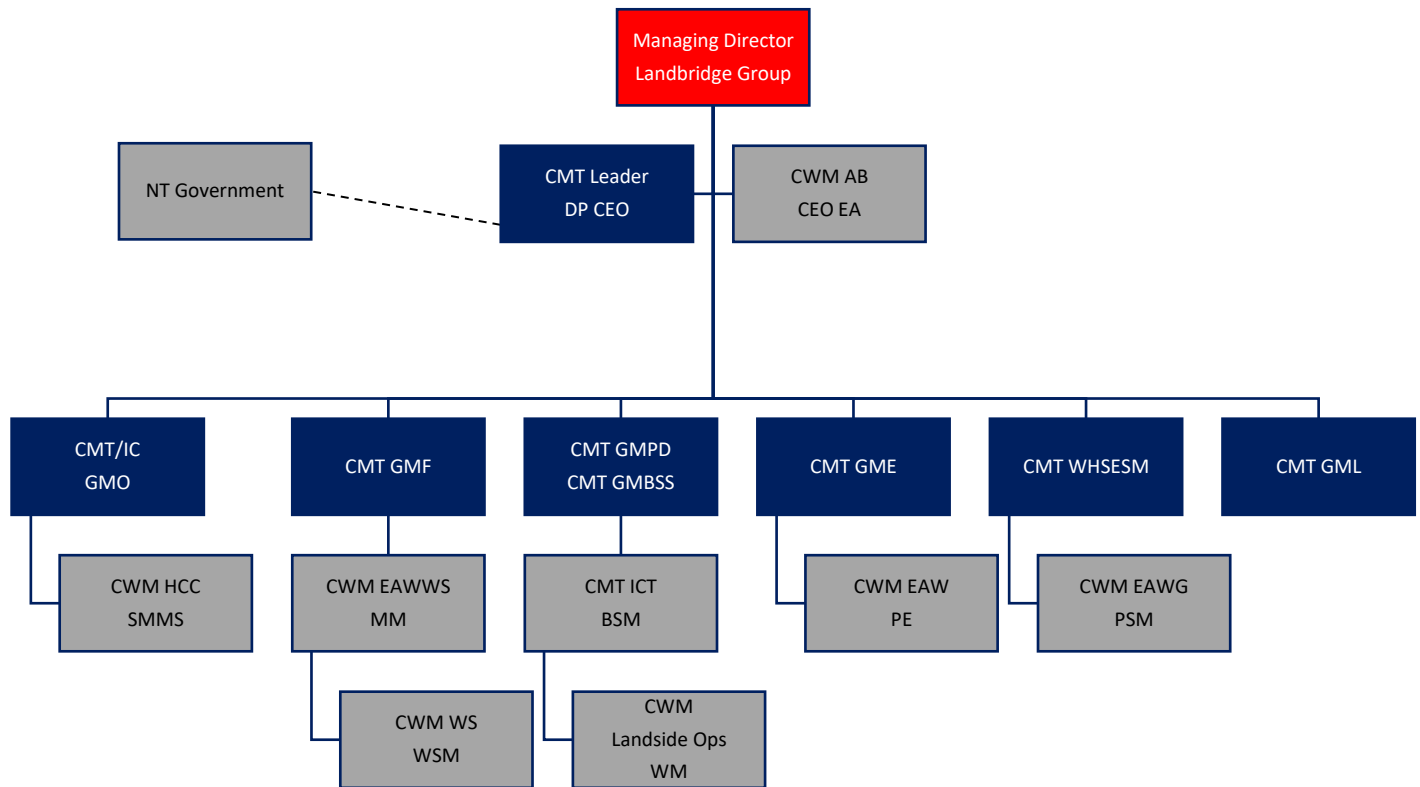


Figure 1 – DP Emergency Management Structure Adapted for Cyclone Events

The GMO is the CMT IC. The GMO, or the acting GMO have statutory powers as Port Management Officers under the Ports Management Act 2015 that can be used during the management of a cyclone event. The GMO is responsible for the management of operations on the harbour during a cyclone response.

Cyclone Worksite Managers (CWMs) are appointed to manage a range of cyclone procedures prior to, during and after a cyclone event. Their areas of responsibility are as follows:

- CEO EA – DP Administration Building
- – Vehicles (?)
- Business Systems Manager – Information & Communications Technology
- Superintendent Landside Operations – East Arm Wharf Gatehouse
- Senior Manager Marine Services – Harbour Control & Pilot Boats
- Cargo Operations Manager – EAW Cargo Office
- Maintenance Manager – EAW Workshop
- Wharf Services Manager - Fort Hill Wharf, Pontoon and Fenders

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 12 of 42

NOTIFICATION OF CLOSURE OF SCHOOLS

On receipt of advice from the CDC that schools have been closed, and subject to approval from their respective GMs, primary care givers may be released from duty to collect their children from school.

If a childcare centre closes due to the “Notification of Closure of Schools”, primary care givers may be released from duty to collect their children.

Employees with other carer responsibilities, e.g. elder care or who collect children from a childcare centre which is closed prior to the “Notification of Closure of Schools”, may be released from duty to attend to their carer responsibilities.

Darwin Port will not close at this time and all other employees are to remain at work.

NOTIFICATION OF CLOSURE OF DARWIN PORT OFFICES

The CEO will release non-essential staff, with pay, to seek shelter where possible.

Employees with cyclone management responsibilities (including rostered HCO's, MSG's and DCO's) are required to remain at work, if it is safe to do so, until they have completed their responsibilities under this plan or until the CEO moves to Stage 4.

All DP employees should ensure that adequate individual cyclone preparation measures have been implemented to ensure the safety of their families, homes and property, before a cyclone is directly affecting the Greater Darwin region. Additional cyclone preparedness information is available from the Northern Territory Emergency Services website at-

<http://www.pfes.nt.gov.au/emergency-service/public-safety-advice/natural-disaster-advice/cyclones>

KEY STAKEHOLDERS

The following entities have been identified as key stakeholders and should be familiar with the DP Cyclone Procedure:

- Department of the Chief Minister (Emergency Response Group)
- Department of Infrastructure, Planning and Logistics
- NT Police, Fire and Emergency Services
- All DP Tenants
- All Port of Darwin Users

The DP Cyclone Procedure is available to download from the DP website:

<https://http://www.darwinport.com.au/facilities-services/emergency-cyclone-plans>

Stakeholder and contact details for response agencies are contained in **Appendix 1 - Contact Details**.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 13 of 42

RESPONSIBILITY OF SHIP'S MASTERS AND OWNERS

Masters, vessel operators and owners of vessels are responsible for the following:

- Ensuring that no vessels are left unattended whilst at anchor in the designated Small Boat Anchorage (SBA).
- Ensuring that they have their own current cyclone contingency plan and providing a copy (in electronic form) to the GMO if requested.
- Ensuring a responsible OOW is contactable 24 hours to receive notification of potential severe weather events;
- Awareness of the advice contained in the Mariners' Handbook NP100 regarding navigable and dangerous semicircles of Tropical Revolving Storms;
- Ensuring the safety of their vessels and crew;
- Ensuring their vessels are secured;
- Ensuring main engines are not immobilized within the port limits without prior approval of the GMO or acting GMO.
- Following explicitly, all directions issued to them by the GMO or acting GMO.
- Following explicitly, all instructions issued to them by the General Managers and staff of Darwin Port;
- Bearing the cost of any damage caused by their vessels to Darwin Port infrastructure and/or other vessels.

Masters of all vessels working in Darwin Port between 1 November and the 30 April will be advised to familiarise themselves with current DP Cyclone Procedure and obtain a copy of the map outlining cyclone mooring locations in and around Darwin Harbour Shown in **Appendix 2 - Cyclone Refuges**.

DARWIN PORT MARINE PILOTS

DP Marine Pilots are responsible to:

- Ensure that vessel masters are aware of these cyclone procedures and their obligations;
- Facilitate effective communication and execution of these procedures with all relevant parties;
- Obtain 24-hour contact details with the responsible OOW, for potential severe weather event communications;
- Disseminate established contact details for communication of potential severe weather events.

VESSEL TRACKING

Darwin Harbour on-duty HCO will coordinate the tracking of all vessels affected by the Cyclone Response.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 14 of 42

COMMUNICATION

GMO / Regional Harbour Master (RHM) Relationship

The GMO is an appointed Port Management Officer (PMO) under the Ports Management Act 2015, having statutory authority to issue directives and ultimately, if the situation requires, to close Darwin Port.

The GMO shall meet regularly with the RHM. It is essential that a strong working relationship exists between the GMO and the RHM, and that the GMO keeps the RHM fully informed regarding cyclone preparedness, the possibility of a cyclone, and in the case of a cyclone, the GMO shall keep the RHM informed of any cyclone response action taken by DP. Contact may be by phone calls, by email or in person.

The RHM is a regulatory officer and in accordance with the Ports Management Act, has step in rights and authority to direct a PMO to act in accordance with his or her directions should he or she feel the situation so demands.

Stakeholders for Early Engagement

There are many stakeholders under the DP Cyclone Procedure. The DP Cyclone Procedure and associated standard operating procedures identify the engagement of certain stakeholders during a cyclone event.

Because they manage assets that are effectively outside the control of DP, certain critical stakeholders require early engagement. A close working relationship needs to be in place with these stakeholders well prior to, and during, the cyclone season. The relationship should include meeting and exchanging copies of respective cyclone plans prior to the official cyclone season to discuss any cyclone plan changes, and to clarify the roles and responsibilities of the various parties in a cyclone event. Key stakeholders are encouraged to ensure that they are suitably identified within the DP Cyclone response plan through engagement at the Port User Group forums which are hosted regularly throughout the year by Darwin Port GM Port Development.

In the case of a developing tropical low with no cyclone watch yet being declared, these critical stakeholders must be engaged so that preparedness for Darwin Port is optimised.

These critical stakeholders include but are not limited to:

- Department of Infrastructure, Planning and Logistics, particularly in their capacity as operators of various wharves, the Frances Bay Mooring Basin and the Frances Bay lock facility. DP is to obtain, review and hold a copy of the DIPL cyclone plan prior to the commencement of the cyclone season and to review it accordingly. Additionally, DP is to provide a copy of its own cyclone plan to DIPL. Any content requiring clarification are to be resolved prior to the commencement of the cyclone season.
- Royal Australian Navy, regarding the HMAS Coonawarra and Naval Vessels generally. DP is to obtain, review and hold a copy of the RAN's Coonawarra cyclone plan prior to the commencement of the cyclone season.
- Darwin Waterfront, particularly regarding wharf tenants and tourism operators. DP is to obtain, review and hold a copy of the Darwin Waterfront facility cyclone plan prior to the commencement of the cyclone season and to review it accordingly. Additionally, DP is to provide a copy of its own cyclone plan to Darwin Waterfront. Any queries or points regarding clarification are to be resolved prior to the commencement of the cyclone season.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 15 of 42

Refer to Appendix 1 for Contact Details

Communications during cyclone response

Communication with Port of Darwin stakeholders will be by the GMPD using the Port User Group contact list.

Communication with EAW tenants and operators of berth and marine facilities will be by the GMO to those stakeholders **highlighted** in the stakeholder contact list.

Exercise Procedure

Prior to the 1st November 2019, DP is to conduct a stakeholder desktop cyclone exercise. The exercise is to involve, at a minimum, the stakeholders mentioned above. The purpose of such exercise is to ensure that all parties can apply the cyclone plan, identify and eliminate any inadequacies and address any areas of confusion regarding roles or responsibilities. A similar exercise is to be conducted with all DP personnel who have a role in this Cyclone Procedure.

COMMUNICATION METHODS

Various means of communication will be used during the response to a tropical cyclone event as follows:

Face to Face meetings may be held by the CMT, usually in the Beagle Room at the DP Administration Building. Alternative venues may be selected during the incident to minimise travel or in the event of damage to the Administration Building.

Microsoft Teams will be used to facilitate Covid-19 safe communications with stakeholders where necessary.

Teleconferencing will be used by the CMT to minimise travel.

Mobile Phones will be used for all communications to staff on status of cyclone plan and requirements to attend the workplace. Important messages and changes in the tropical cyclone and the port status will also be communicated using mobile phones.

Marine VHF Radio will be used to broadcast information to port users and stakeholders. Darwin Harbour Control will be the radio communications hub and will be responsible for broadcasting updates regarding the TC status, the current level of watch/warning and information regarding vessel movements and the status of the port. A list of DP personnel utilising VHF radios is in **Appendix 3 - DP Call Signs**. Various VHF channels are allocated for port and harbour operations as detailed in **Appendix 4 – VHF Channels**.

The communication means listed above are preferred due to the 'closed loop' nature of the communication.

Email will be used to distribute information, including status information for the tropical cyclone and Darwin Port.

Social Media - Darwin Port Operations has established; Facebook, Instagram and Twitter accounts under Darwin Port Operations. Darwin Port will use these social media platforms to communicate the status of the port and associated operations.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 16 of 42

WebEOC is a computer-based Emergency Operations Centre capability which has been adopted for use in the NT by NTES. WebEOC provides NT Incident Command with information regarding response activities. Information is provided via the RHM.

DP website will be used to provide information on the status of the Port and the DP tropical cyclone response.

DP intranet will be used to provide DP personnel with updates regarding the current Port status and its tropical cyclone response.

Text Messages - Individual managers will utilise text messages as a means of communicating information to personnel in their teams.

MEDIA MANAGEMENT

Engagement and interactions with media are coordinated by the GMPD and all media enquiries should be directed to the GMPD on mobile 0401 117 056.

DP takes direction from NTG, who will issue coordinated public cyclone announcements. The Chief Minister and the Police Commissioner are the only persons authorised to make public announcements on behalf of NTG.

DP is responsible for providing public statements on the status of the Port of Darwin during a cyclone; that is, whether it is open or closed and safety messaging provided to commercial vessels within the Port of Darwin.

WEATHER FORECAST MONITORING

Darwin Port monitors numerous weather forecasting sites during the cyclone season in order to maintain a well-developed and early understanding of the potential weather impact.

TROPICAL CYCLONE SEVERITY CATEGORIES

The severity of a tropical cyclone is described in terms of categories ranging from 1 to 5 related to the severity of the cyclone.

The BOM Warning Service is not designed to give an exact statement of conditions at individual locations but will give a general idea of the expected worst conditions. Using this severity scale, communities will be able to assess the degree of cyclone threat and take appropriate action.

Category	Maximum Wind Gust	Typical Effects
1 – Tropical Cyclone	Less than 125km/h Gales	Minimal house damage. Damage to some crops, trees and caravans. Boats may drag moorings.
2 – Tropical Cyclone	125 – 164km/h Destructive Winds	Minor house damage. Significant damage to signs, trees and caravans. Heavy damage to some crops. Risk of

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 17 of 42

		power failure. Small boats may break moorings. e.g. Cyclone Marcus – Darwin March 2018
3 – Severe Tropical Cyclone	165 - 224 km/h Very destructive winds	Some roof and structural damage. Some caravans destroyed. Power failure likely. Boats will break moorings.
4 – Severe Tropical Cyclone	225 – 279 km/h Very destructive winds	Significant roofing and structural damage. Many caravans destroyed and blown away. Dangerous airborne debris. Widespread power failure. e.g. Cyclone Tracy – Darwin 1974
5 – Severe Tropical Cyclone	More than 280 km/h Extremely destructive winds	Extremely dangerous with widespread destruction. e.g. Cyclone Monica – Maningrida 2006

Additional information can be found on the BOM website by following the link:

<http://www.bom.gov.au/cyclone/about/>

TROPICAL CYCLONE SERVICES

BOM provides the following cyclone information services throughout the cyclone season.

Tropical Cyclone Seasonal Outlook

This is issued at the beginning of the season to provide an estimate of the level of tropical cyclone activity in the coming season.

Tropical Cyclone Outlook

These are issued daily throughout the tropical cyclone season. They provide a forecast up to three days in advance of the probability of cyclone development in the seas around Australia.

Tropical Cyclone Information Bulletin

These are issued when a cyclone is active in the Australian region but is not expected to impact land-based communities within 48 hours.

Tropical Cyclone Watch

A watch is issued if a cyclone is expected to affect coastal communities within 48 hours, but not expected within 24 hours.

Tropical Cyclone Warning

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 18 of 42

A warning is issued if a cyclone is affecting or is expected to affect coastal communities within 24 hours.

Technical Bulletin

The Tropical Cyclone Technical Bulletin provides technical details about the cyclone.

Tropical Cyclone Forecast Track Map

These are issued with tropical cyclone advices to give a graphical representation of the cyclone's past track forecast movement and its threat area.

Marine Warnings

Marine warnings are issued for high seas and coastal waters threatened by cyclones.

Additional information can be obtained from the BOM website:

<http://www.bom.gov.au/cyclone/about/warnings/>

A DP cyclone response is triggered by the declaration of a cyclone watch or warning, but response actions may be initiated prior to either a watch or a warning being declared if the CMT considers early action is warranted.

It must be noted that not all cyclones develop in a position to enable a staged information and warning process from 48 hours before the event. A good example is Cyclone Carlos which formed very close to Darwin on the morning of 15 February 2011. A cyclone watch was declared at 11:00, a warning at 17:00 and the strongest winds were experienced the same night.

Additionally, DP, subscribes to the Early Warning Network weather alerts for specified staff. The list of recipients for these alerts is to be reviewed and updated annually prior to the commencement of the next cyclone season.

STORM SURGE

Both EAW and FHW are within the Darwin storm surge zone. There is a risk of inundation at both wharves should a storm surge coincide with a high tide. The extent of the inundation would be influenced by the height of the storm surge and the tide height. EAW and FHW decks are 1.5 metres above the Darwin Highest Astronomical Tide (HAT) height of 8.0 metres.

Potential storm surge inundation depths are available from a 2010 Department of Land Resource Management study available from the website <https://denr.nt.gov.au/land-resource-management/water/water-resources/flooding-reports-maps/storm-surge-inundation-maps>

Maps showing storm surge zones are in **Appendix 5 – Storm surge inundation**

Port users need to be aware of the risk of storm surge at both FHW and EAW. Inundation is likely to affect any cargo stored at EAW and could affect the continuous provision of electrical power at the wharf.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 19 of 42

DP CYCLONE MANAGEMENT CONSIDERATIONS

The Port of Darwin is the only port between Townsville and Fremantle with full access to multi-modal transport services and Australia's nearest port to Asia and the nation's 'northern gateway' for Australasian trade. Darwin Port provides pilotage and harbour control systems and a supply chain capable of handling containers and general cargo, bulk liquids, bulk materials, live exports and heavy lift oversized cargoes. Darwin Port also services cruise ships and naval vessels at the Fort Hill Wharf and cruise ship terminal. It is also a key support hub for the offshore oil and gas fields in the Arafura Sea, Timor Sea and waters off the coast of Western Australia.

This multi-modal nature of operations introduces many considerations when prioritising shipping during preparations for an approaching tropical low or cyclone and the potential closure of the port. These considerations include; crew and passenger welfare, livestock welfare, the number and types of ships in the port, the status of cargo operations and ship seaworthiness, tidal windows and potential draft restrictions, the lead time necessary to safely evacuate ships from the port, tug availability, pilot availability and potential impacts on the two gas terminals..

The Port of Darwin also contains the Santos LNG jetty and the INPEX LNG, LPG and condensate jetties. Both LNG terminals occasionally receive LNGC's with membrane constructed tanks. Membrane constructed LNGC's introduce a specific consideration due to "sloshing". Within a range of tank filling levels, the natural pitching and rolling of the ship at sea, and the liquid free-surface effect, can cause the liquid to move within the tank. It is possible for considerable movement to take place, creating high impact on pressure on the tank surface. This is called "sloshing" and can cause structural damage.

In collaboration with INPEX and Santos a Membrane tanker loading management process has been developed to identify Upper and Lower sloshing limits. This process assists in vessel movement planning during the approach of a cyclone. The loading of Membrane LNGC's during the cyclone season is monitored, recorded and updates distributed to applicable stakeholders. The management of Membrane tankers could see their visit to the respective LNG terminal brought forward to allow the cargo to be loaded and the ship to depart safely ahead of the cyclone impact. Alternatively, the Membrane tanker arrival may be delayed until after the cyclone has passed through the Greater Darwin region.

DP CYCLONE MOORING MANAGEMENT

- Darwin Port has sole responsibility for the care, use and maintenance of all its owned moorings and components and associated costs of replacement.
- Darwin Port arranges for all inspections required by the applicable mooring requirements and mooring license terms and conditions.
- Darwin Port currently undertakes annual inspections of its owned moorings. The annual mooring inspections are carried out immediately prior to the commencement of the Cyclone Season.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 20 of 42

DP CYCLONE MANAGEMENT STAGES

DP monitors tropical lows and cyclones to make an early assessment of its likely path, development and potential impact on the port's infrastructure and operations. Any actions, if deemed necessary will be taken on the basis that a tropical low may develop to cyclone intensity at close range to the port, and category one cyclones have the potential to intensify immediately prior to crossing the coast. In assessing such potential, advice and information will be obtained from the BOM and other appropriate, reliable sources.

DP manages multiple worksites and a variety of infrastructure. DP uses a six-stage plan, to manage its response to a cyclone as outlined below:

DP REPONSE STAGES	
Pre-Season Readiness	Cyclone procedure and Standard Operating Procedures reviewed and updated. Port users informed of cyclone precautions. Revised Cyclone Procedure distributed to staff and stakeholders.
Stage 1 – Cyclone Watch (48hr)	Actions as per Stage One requirements in Cyclone Procedure. Standard Operating Procedures completed by relevant staff members. Ships placed on four hours' notice of readiness.
Stage 2 – Cyclone Warning (24hr)	Actions as per Stage Two requirements in Cyclone Procedure. Key staff report to designated work areas. Standard Operating Procedures completed by relevant staff members. Ships placed on one hour's notice of readiness. Vessels may leave of their own accord.
Stage 3 – Cyclone Warning (12hr)	Actions as per Stage Three requirements in Cyclone Procedure. Standard Operating Procedures completed by relevant staff members. All equipment secured. Essential service vessels taken to designated cyclone refuges. Vessels to leave port or proceed to designated cyclone moorings or havens.
Stage 4 – Safety Management and Lockdown	All staff leave worksite and take shelter as directed by the CEO.
Stage 5 – Destructive winds reach Greater Darwin	All staff remain in shelters.
All clear pending	Key personnel report to allocated work areas. Preparation for declaration of all clear. Plan for opening of Port agreed and communicated to stakeholders.
Stage 6 – All Clear	All staff report to work once it is safe to do so. Damage assessment commenced. Harbour safety assessed.
Post Cyclone Recovery	Staff availability confirmed. Communication systems re-established. Equipment damage reports completed. Damage mitigation actioned.
Stand Down	Cyclone damage mitigation completed. Debrief of cyclone response. Cyclone Procedure updated where necessary.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 21 of 42

PRE-SEASON READINESS

TASK (to be completed prior to 1 November)	Responsible Office	Applicable SOP
Conduct a cyclone awareness meeting for your location: <ul style="list-style-type: none"> • update listing of CWMs • explain the Cyclone Management Structure and roles of individual officers • ensure all staff are aware of the location of emergency equipment and • remind staff to review the cyclone procedures on DP Intranet 	IMT IC	
Check that all equipment (generators, batteries, radios) are in good working order	CWM	
Check that all DP vehicles have a spare key secured in a known location for each worksite	Team Administrators	
Check that spare keys for all worksites have been secured in a known location	PSM	
Check that first aid supplies and torches are in order and restock as required	WHSFO	
Check cyclone status notification EAW message sign on archway	SLO	
Provide notice to masters, operators, owners and agents of all vessels in the Port, and those entering Port, as to their responsibilities for operations during the wet season	GMO	SOP_OPS/38
Test lifting apparatus for pilot boat pontoon gangway	GMF	
Ensure port stakeholder list is updated and current	GMPD	
Advise East Arm, and Fort Hill Wharf tenants that they are required to secure all loose materials in readiness for the cyclone season	GMO	SOP_OPS/22
Ensure Qube and LINX cyclone plans for harbour cranes are appropriate	GMO	
Advise stevedoring companies re procedures for securing of EAW ship loader during the wet season	Cargo Manager	
Ensure that your individual work unit area is free of potential missile hazards	GMs and Managers	
Ensure this whole plan has been read so you know what to expect and how to access the information should a cyclone eventuate	All Staff	
Ensure you are aware of who your CWM is for your location and make sure you have your CWM and General Manager's contact details	All Staff	
Ensure personal contact details are correct in Chris21 or ADP as appropriate	All Staff	
Update early warning subscription register	SMMS/EA	

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 22 of 42

STAGE ONE – CYCLONE WATCH (48 HOURS)

In line with standard practice for emergency management, Darwin Port undertake activities for the prevention of, preparation for, response to, and recovery from the specific risks associated with a near or direct impact from a cyclone. To mitigate the risk of injury to people, damage to the port infrastructure and operations and/or financial loss, the following checklists are used as an aide-memoire for the preparation, response and recovery stages.

Certain tasks are deemed to be mandatory (**M**) and must be completed as applicable to each stage of a cyclone event.

Other tasks are deemed to be non-mandatory (*), taking into consideration the assessment of a cyclones likely path, development and potential impact on the port's infrastructure and operations, the GMO, or designated PMO, in consultation with the DP cyclone management team may determine and approve that non-mandatory tasks may be delayed or not undertaken.

TASK		RESPONSIBLE OFFICER	APPLICABLE SOP
M	Re-confirm the following to General Managers: <ul style="list-style-type: none"> Spare keys secured in a central location for vehicles and worksite access doors Equipment (radios, torches, generators) is in order Office equipment can be stowed safely and that loose items are capable of being secured	CWM	
M	Ensure staff complete preliminary preparations to store non-essential office equipment and secure loose items	CWM	
M	Ensure you have contact details for your supervisor	All Staff	
M	Provide an up-to-date list of employees' names, addresses and phone numbers to your CWM and DP FSM	General Managers	
M	Instruct all vessels in the harbour that a cyclone watch has been declared and that all vessels are required to declare themselves on four hour's readiness	GMO/HCOs	SOP_OPS/34
M	Warning notice for small boat owners in SBA activated	GMO	SOP_OPS/35
M	Activate the cyclone watch notification message on the EAW archway on direction by the CEO or GMO	SLO	SOP_OPS/19
M	Maintain normal gatehouse operations	SLO	
M	Commence preparations to secure gatehouses at EAW & FHW	SLO	
*	Notify contractor of need to remove the awning from the passenger transfer area at FHW	GMF	SOP_OPS/30
M	Check the security of cargo shed doors and windows	Cargo Manager	
M	Notify shipping agents and stevedoring companies that all non-essential equipment must be secured	Cargo Manager	SOP_OPS/23
M	Request DAWR to expedite inspection of any DG containers under Biosecurity control.	Cargo Manager	

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 23 of 42

M	Meet with EAW tenants to discuss anticipated severity of cyclone and to determine actions in respect of stacked containers, refrigerated containers, DGs, Mobile Harbour Cranes and any other relevant factors	GMO	
M	Engage with DLNG and ILNG to discuss the anticipated cyclone severity and what actions to take for ships alongside, ships due to arrive and the risk of tank-top events. In particular any Membrane LNGC's in port or arriving.	GMO	
M	Ensure pilot boats are fuelled and ready for securing at short notice	PBMs	
*	Make preparations to secure FHW Pilot boat pontoon. Only lift gangway if necessary	SMMS	SOP_OPS/81
M	Check security of the ship loader belting	Maintenance Manager	
*	Ensure that all fleet vehicles have been fuelled	Maintenance Manager	
M	Ensure bulk diesel tanks are full	Maintenance Manager	
M	Ensure oil, water and tyres are checked on all plant	Maintenance Manager	
M	Ensure all generators at all sites are fuelled and operational Confirm that all duplicate keys are held in a central and secure location for worksite access doors, DP vehicles and security cabinets.	Maintenance Manager CWM	
M	Initiate ICT preparations	Business Systems	SOP_OPS/39
*	Remove Yokohama fenders from water	GMF	SOP_OPS/28
M	Brief RHM on DP cyclone response status	GMO	
M	Carry out inspection of the SBA, advise owner/operator to remove any unattended vessel to a safe refuge.	GMO/PBM's	

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 24 of 42

STAGE TWO – CYCLONE WARNING (24 HOURS)

TASK		RESPONSIBLE OFFICER	APPLICABLE SOP
M	Advise General Managers that a cyclone warning has been declared	CEO	
M	Advise all staff and visitors that a cyclone warning has been issued	CEO	
M	Activate the cyclone warning notification message on the EAW archway on direction by the CEO or GMO	SLO	SOP_OPS/20
M	Instruct agents of all vessels in the harbour that a cyclone warning has been declared and that all vessels are required to declare themselves on one hour's readiness	GMO/HCO	SOP_OPS/37
M	GMO will consider closing the Port having risk assessed the situation in consultation with CMT and stakeholders. No vessels will be allowed to remain at DP anchorages or berths if the port is closed	GMO	
*	Instruct all vessels SCHEDULED to enter the harbour within the next 24 hours that they will have to make alternative arrangements until the cyclone threat has eased.	GMO/HCO	SOP_OPS/36
*	Remove the awning from the passenger transfer area at FHW if this has not been done earlier	GMF	
M	Secure FHW plant and equipment	GMF	
*	Secure environmental monitoring equipment	Environmental Manager	SOP_OPS/27
*	Secure workspaces	All staff	
*	Undertake ICT shutdown procedures	All staff	SOP_OPS/39
*	Ensure that external work areas have been cleaned up and areas are free of potential missiles	CWM	
M	Assist General Managers to ensure that vehicles are fully fuelled, and spare keys secured	Team Adminstrators	
*	Secure the cattle races	Cargo Manager	
M	Re-check that all loose material has been secured or removed from EAW	Cargo Manager	
*	Lash and secure all cargo and equipment remaining on the wharves	Cargo Manager	
M	Instruct stevedores to reduce windage impact on container stacks	Cargo Manager	
M	Re-check all generators are fuelled and operational	Maintenance Manager	
M	Re-check all emergency communication equipment is operational and back up batteries are fully charged	Maintenance Manager	
M	Ensure the pilot boats are fully fuelled and ready for immediate use	SMMS	
M	Check that all communications equipment is operational	Line Managers	

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 25 of 42

*	Supervise clean-up of work areas including store areas	Line Managers	
M	Make preparations to secure FHW pilot boat pontoon & lift gangway if necessary.	SMS	SOP_OPS/81
*	Remove Yokohama fenders from water	GMF	SOP_OPS/28
M	Brief RHM on DP cyclone response status	GMO	

DRAFT

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 26 of 42

STAGE THREE – CYCLONE WARNING (12 HOURS)

TASK		RESPONSIBLE OFFICER	APPLICABLE SOP
*	GMO will reconsider closing the Port having risk assessed the situation in consultation with stakeholders. No vessels will be allowed to remain at DP anchorages or berths if the port is closed	GMO	SOP_OPS/24
*	If the port is closed, instruct all vessels except those in the mooring basin, or those necessary for duty, to clear for sea or seek refuge in the designated cyclone refuge areas.	GMO/HCO	
M	Notify all visiting contractors and vendors	CEO	
M	CEO may issue notice to non-essential staff to leave the work site.	CEO	
M	Activate the cyclone warning (12 hr) notification message on the EAW archway on direction by the CEO or GMO OR, if the port is closed Activate the Port Closed notification message on the EAW archway on direction by the CEO or GMO	SLO	SOP_OPS/21
M	Secure cruise ship terminal and FHW	SLO	SOP_OPS/29
M	Secure all gatehouses at EAW and FHW	SLO	SOP_OPS/25
M	Secure pilot vessels in the mooring basin – 3m tide dependent	SMMS	
M	Close all water valves on FHW and EAW	GMF	
M	Isolate backup power generator as required	GMF	SOP_OPS/26
M	Close main water valves adjacent to wharf abutments at EAW	Cargo Manager	
M	Ensure you have your CWM and General Manager's contact details	All staff	
M	Secure all sheds and offices on EAW	Cargo Manager	
M	Secure ship loader and belting at EAW	Cargo Manager	SOP_OPS/18
M	Isolate power to ship loader	Cargo Manager	
M	Await instructions from the CEO or delegate	All staff	
M	Brief RHM on DP cyclone response status	GMO	

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 27 of 42

STAGE FOUR – SAFETY MANAGEMENT AND LOCKDOWN

COMMENT		RESPONSIBLE OFFICER
	An official announcement will be made by the Northern Territory Emergency Services advising the public to seek shelter.	All Staff
*	If the port is closed and it is assessed that personnel should leave the workplace, the CEO will instruct all personnel to leave the workplace. Please Note: All staff must check in with their General Manager before leaving.	All Staff
M	All staff will leave the worksite if and immediately seek shelter when directed by the CEO or IMT IC.	All Staff

STAGE FIVE – DESTRUCTIVE WINDS REACH GREATER DARWIN

COMMENT		RESPONSIBLE OFFICER
M	All staff will remain in their cyclone shelter.	All Staff

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 28 of 42

ALL CLEAR PENDING

When All Clear Pending is announced, **the following Darwin Port Staff** are to report for work at the earliest practicable time, irrespective of whether the day falls on a weekend or public holiday. Personnel should only report to work if it is safe to do so.

The following key personnel will report to their allocated work area as set out below:	
CMT	All members of the CMT are to report to the DP Administration Building
CWMs	Report to their areas, ascertain status of facilities under their control and report to the CMT
Superintendent Landside Operations	Normal place of work
Security guards	Rostered guards to report to their allocated workplace
Harbour Control	Duty HCO's to report to Harbour Control Centre
Cargo Manager	Normal place of work
Maintenance Manager	Normal place of work
Marine Pilots	Pilots rostered on should report to the DP Administration Building
Pilot Boat Crew	Rostered pilot boat master and deckhand should report to FHW. Off duty pilot boat masters and deckhands should make themselves available to operate other floating plant.
WH&S Manager	Normal place of work
Environment Manager	Normal place of work
Duty Cargo Officers	Rostered Duty Cargo Officer to normal place of work

All other staff are expected to listen to radio or other media broadcasts and to contact their GMs to determine what action is required.

Employees who are unable to return to work due to their personal circumstances (e.g. school remains closed, local flooding prevents travel, severe damage to an employee's residence requiring immediate attention), may, with GM approval, take appropriate leave.

Reporting for work should be as soon as possible after arrangements have been made for the accommodation of dependants and the safeguarding of property.

Other staff will be advised to report for work at the earliest practicable time.

1. The CEO will liaise with Emergency Services and NTG Disaster Committees as required.
2. General Managers are to contact staff and report to the CMT on the availability of personnel and expectation of level of service available in the short term.
3. A central debrief is to be conducted by the CMT as soon as practical to develop a recovery plan (refer Post Event Recovery).
4. The IMT IC is to advise the CEO of the current operational situation and provide formal report as soon as possible.

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 29 of 42

STAGE SIX – ALL CLEAR

After due consideration and consultation, the CEO may issue an 'all clear' and CMT members to liaise with staff to return to work. As soon as possible after arrangements have been made for the accommodation of dependants and the safeguarding of property, **all staff** are required to report back at work during normal business hours.

DP has significant responsibilities to its stakeholders, and it is important that normal business operations be restored as quickly as possible.

Staff members who have not been contacted by their GM or CWM after the Cyclone All Clear has been declared are to contact their GM or CWM as soon as possible.

If it is evident that Darwin has suffered considerable damage because of the cyclone, only key Darwin Port employees will be recalled as necessary. If in doubt, contact your GM or CWM.

POST EVENT RECOVERY

IMT IC (under CEO direction)

1. Maintain liaison with RHM to coordinate any specific requirements for Darwin Port. GMO to brief RHM on port status.

General Managers

1. Check status of staff, report staffing position to IMT IC and advise details of key personnel present.
2. Check your unit's operational capability and level of damage, including condition of equipment and report to the IMT IC.
3. Identify what manual processes need to be implemented and ensure staff have effective procedures for recording and processing all work.
4. Ensure all vehicles/equipment available for use have required priority and ensure that all vehicle/equipment allocations are recorded.
5. Keep the IMT IC informed on the operational capacity of your section and additional resources/private sector contractors etc. required to effect repairs.

Cyclone Worksite Managers

1. Convene meeting with available General Managers, assess damage, devise recovery strategy and re-establish priorities.
2. Prepare status reports for all buildings and operational areas including details of staffing and report to General Manager.
3. Continue to liaise with business units and facilitate recovery arrangements.

Port Infrastructure

The priority is to assess the status of all DP infrastructure. The severity of the cyclone and its consequences will influence the decision to reopen the port will include an assessment of:

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 30 of 42

- The integrity of the shipping channels including any changes to channel depths;
- The integrity of navigation aids;
- The loss of any vessels, containers or other large objects that could pose a navigation hazard; and
- Damage to Port infrastructure that affects the ability to moor and service vessels safely.

Depending on the severity of the cyclone event, the assessment may be done using in-house resources or may be tasked to external contractors.

STAND DOWN

The NT Government will declare stand down once it is considered that no further counter disaster measures are necessary. Declaration of stand down is followed by a series of formal debrief meetings aimed at improving response plans and procedures. The DP debrief will be coordinated by the IMT IC.

DRAFT

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 31 of 42

APPENDIX 1: - CONTACT DETAILS

CATEGORY	COMPANY	NAME	POSITION	MOBILE	OFFICE	EMAIL
Aviation	Air Services Australia/Canberra				1300 301 120 02 6268 4111 1800 801 960	-
Aviation	Airborne Solutions				1300 435 486	info@airbornesolutions.com.au
	Amateur Fishermen's Association of the NT (AFANT)				08 8945 6455	research@afant.com.au
DMSB	ASCO	John Cowan	Manager	0448 148 957		john.cowan@ascoworld.com
ABF	Australian Border Force		Switchboard - AH Marine Logistics	1300 558 099 0419 515 859	02 6264 1111 08 8980 6677	marinesupport@abf.gov.au
ABF	Australian Border Force Marine Logistics Darwin		Marine Logistics	0419 515 859	08 8998 6211	act.op.command@abf.gov.au
Commonwealth Gov	Australian Maritime Safety Authority (AMSA)	Joint Rescue Coordination Centre	24H Contact	1800 641 792	02 6230 6811	rccaus@amsa.gov.au
APPEA	Australian Petroleum Production & Exploration Association (APPEA)	Keld Knudsen	Director NT	0434 123 780	02 6247 0960	appea@appea.com.au
Commonwealth Gov	Australian Transport Safety Bureau (ATSB)		24/7 Aviation, Marine, Rail Accident/Incident Notifications		1800 011 034	atsbasir@atsb.gov.au
Misc	Baker Hughes	Kevin Smith	Lead Onsite Service Specialist	0419 817 613	08 8943 5603	Kevin.j.smith@bakerhughes.com
Marine Service Provider	Barge Express	Nathan Barrett Ken Conlon Peter Harrajon	General Manager Owner Engineering Manager	0403 356 966 0407 889 493 0447 889 493	08 8947 4960	gm@bargeexpress.com.au ken@bargeexpress.com.au shipping@bargeexpress.com.au
Marina	Bayview Marina	Ludbrook Services	Marina Manager and Lockmaster	0477 661 130		marinamanager@bayviewmarina.com.au
Marine Service Provider	Bhagwan Marine	Luke Morand	Regional Manager	0407 664 266	08 8982 0600	luke.morand@bhagwanmarine.com

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 32 of 42

CYCLONE PROCEDURE 2020-21

CATEGORY	COMPANY	NAME	POSITION	MOBILE	OFFICE	EMAIL
BOM	Bureau of Meteorology (BOM)	Todd Smith	Manager, Hazard Preparedness & Response	0417 897 324	08 8920 3801	Todd.Smith@bom.gov.au
Emergency Svs	Bushfires				08 8922 0844	BushfiresNT.Compliance@nt.gov.au
Fuel Provider	Chevron	Andrew Swart Darren Hill	Darwin Operations Manager Operations Logistics	0448 886 939 0428 777 618	08 8984 0840	andrew.swart@chevron.com.au darren.hill@chevron.com.au
Aviation	Civil Aviation Safety Authority (CASA)		Switchboard		131 757	oar@casa.gov.au
Aviation	Coolibah Air	Dan Ward		0427 432 666	08 8978 9203	reservations@coolibah-air.com.au
ADF	Coonawarra Tower (Navy)	Lieutenant Kristensen	Navy Harbour Master	0407 612 052	08 8935 5420	Postservices.darwin@defence.gov.au
	Coroner's Office				08 8999 7770	nt.coroner@nt.gov.au
Commonwealth Gov	CSIRO				1300 363 400	csiorenquiries@csiro.au
Marina	Cullen Bay Marina Manager	Michael Ward Carmen King	Operations Manager CEO Lockmaster (Radio CH - VHF 11)	0412 321 089 0488 057 888 0419 421 363	08 8942 0400	m.ward@cullenbaymarina.com.au c.king@cullenbaymarina.com.au admin@cullenbaymarina.com.au
Local Gov	Darwin City Council				08 8930 0300	darwin@darwin.nt.gov.au
Commercial Divers	Darwin Dive Co.	Drew Pearce	Manager	0428 438 527		drew@darwindiveco.com
Darwin Port	Darwin Port	Alastair Black	Engineering Project Manager	0404 110 174	08 8919 0883	alastair.black@darwinport.com.au
Darwin Port	Darwin Port	Alyce Breed	Executive/Communications Specialist	0487 303 979	08 8919 0802	alyce.breed@darwinport.com.au
Darwin Port	Darwin Port	Craig O'Connor	Manager, Technology and Systems	0409 349 571	08 8919 0808	craig.oconnor@darwinport.com.au
Darwin Port	Darwin Port	Darren Lambourn	Chief Executive Officer	0488 701 192	08 8919 0801	darren.lambourn@darwinport.com.au
Darwin Port	Darwin Port	Des Blanch	Wharf Manager	0407 319 706	08 8919 0857	des.blanch@darwinport.com.au
Darwin Port	Darwin Port	EAW Gatehouse		0401 110 320	08 8919 0816	security@darwinport.com.au
Darwin Port	Darwin Port	Esteban Cox	Financial Controller	0415 604 985	08 8919 0811	esteban.cox@darwinport.com.au
Darwin Port	Darwin Port	Gary Bawden	Senior Manager, Marine Services	0438 425 394	08 8919 0853	gary.bawden@darwinport.com.au
Darwin Port	Darwin Port	Harbour Control			08 8919 0821	harbourcontrol@darwinport.com.au
Darwin Port	Darwin Port	Ian Niblock	General Manager Operations	0419 840 041	08 8919 0850	ian.niblock@darwinport.com.au

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 33 of 42

CYCLONE PROCEDURE 2020-21

CATEGORY	COMPANY	NAME	POSITION	MOBILE	OFFICE	EMAIL
Darwin Port	Darwin Port	Jack Lawrence	Superintendent, Landside Operations	0434 540 108	08 8919 0819	jack.lawrence@darwinport.com.au
Darwin Port	Darwin Port	Jeremy Wu	IT Systems Manager	0401 117 050	08 8919 0810	jeremy.wu@darwinport.com.au
Darwin Port	Darwin Port	Landside Operations		0408 465 063	08 89190856	cargo@darwinport.com.au
Darwin Port	Darwin Port	Mauro Cammarano	Manager, Maintenance	0448 694 534	08 8919 0832	mauro.cammarano@darwinport.com.au
Darwin Port	Darwin Port	Mike Hughes	Managing Director		07 3020 0903	mike.hughes@landbridge.com.au
Darwin Port	Darwin Port	Peter Dummett	General Manager Port Development	0401 117 056	08 8919 0880	peter.dummett@darwinport.com.au
Darwin Port	Darwin Port	Peter Raines	General Manager Facilities	0408 270 919	08 8919 0830	peter.raines@darwinport.com.au
Darwin Port	Darwin Port	Rhys Jones	General Manager Engineering	0400 872 554	08 8919 0805	rhys.jones@darwinport.com.au
Darwin Port	Darwin Port	Sarah-Jane Archdale	General Manager Legal	0436 014 587	08 8919 0823	sarahjane.archdale@darwinport.com.au
Darwin Port	Darwin Port	Steve Boakes	Manager, Wharf Services	0401 117 067	08 8919 0835	steve.boakes@darwinport.com.au
Darwin Port	Darwin Port	Wayne Bodkin	Senior Manager, Landside Operations & Safety	0419 233 776	08 8919 0886	wayne.bodkin@darwinport.com.au
Medical	Darwin Private Hospital				08 8920 6011	-
Recreation Marine	Darwin Sailing Club			0404 840 880	08 8981 1700	manager@dwnsail.com.au
Recreation Marine	Darwin Trailer Boat Club				08 8981 6749	admin@dtbc.com.au
Marine Service Provider	Darwin Tug & Line	Peter West	General Manager	0417 886 048		info@dtls.com.au
NT Government	Darwin Waterfront	Jess McAneney		0437 621 433	08 8999 5103	darwinwaterfront@nt.gov.au
NT Government	Department of Infrastructure, Planning and Logistics	Simon Saunders	Executive Director Transport Safety and Services	0401 110 092	8924 7598	Simon.saunders@nt.gov.au
NT Government	Department of Infrastructure, Planning and Logistics	Anil Chadha	Regional Harbour Master and Director Marine Safety	0428 181 480	8999 3867	Anil.chadha@nt.gov.au

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 34 of 42

CYCLONE PROCEDURE 2020-21

CATEGORY	COMPANY	NAME	POSITION	MOBILE	OFFICE	EMAIL
NT Government	Department of Mines and Energy		Mines Directorate Energy & Petroleum Directorate	0401 110 356 1300 935 250	08 8999 6528 08 8999 5396	mineral.info@nt.gov.au petroleum.operations@nt.gov.au
Recreation Marine	Dinah Beach Cruising Yacht Club	Wendy McCallum	General Manager	0499 346 242	08 8981 7816	manager@dbcya.com.au
Marine Service Provider	DOF Subsea	Carole Cartledge	Base Manager	0437 158 614	08 9278 8779	carole.cartledge@dofsubsea.com
NT Government	Emergency Services (Police/Fire/Ambulance)		Emergency Non-Emergency		000 (112 from mobile) 131 444	-
Marina	Frances Bay Marina (Duck Pond) Lock	Angus Armstrong Greg Hocking Ana McKay	Manager Wharf Supervisor Smallship Scheduler	0438 924 274 0428 207 612	08 8924 7509 . 08 8922 0617	angus.armstrong@nt.gov.au gregory.hocking@nt.gov.au smallships.scheduler@nt.gov.au
Environmental Svs	Global Environmental Modelling Systems	Dr Graeme D Hubbert	Managing Director	0418 366 336	03 8683 5405	graeme.hubbert@gemms.com.au
Environmental Svs	GSR	Gavin Rahlf	Managing Director	0459 995 013	08 8947 5457	grahlf@gsris.com.au
Marine Service Provider	Hall Contracting	Mark McCurd	General Manager	0417 240 407		markmccurdy@hallcontracting.com.au
NT Government	Harbourmaster	Anil Chadha	Regional Harbour Master and Director Marine Safety	0428 181 480	8999 3867	Anil.chadha@ny.gov.au
LNG Terminal	INPEX	Jamie Collins	Terminal Ops Coordinator LNG1 Panel – LNG Loading (24Hr) LNG2 Panel -LPG Loading (24Hr) Utilities Panel – Condensate Loading (24Hr)	0421 555 291	8983 81108983 8050/8983 8051 8983 8070/8983 8071 8983 8060	jamie.collins@INPEX.com.au
Transport & Logistics	Intermodal Specialised	Dave Loudon			08 8944 1100	intermodalspecialised.dwnoperations@tollgroup.com
	Intertek	Richard Lewis	Operations Manager	0409 596 875	08 8947 0510	richard.lewis@intertek.com
Aviation	Jayrow Helicopters	Adam Tessman	Base Manager	0408 857 973	08 8945 0944	adam.tessman@jayrow.com.au

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 35 of 42

CYCLONE PROCEDURE 2020-21

CATEGORY	COMPANY	NAME	POSITION	MOBILE	OFFICE	EMAIL
Transport & Logistics	Linx	John Featherstone Jason Cole Phil Brewster	Darwin Stevedore Manager Senior Shift Manager Shift Manager	0457 505 586 0429 159 464 0418 898 164	08 8984 4701	j.featherstone@linx.com.au j.cole@linx.com.au p.brewster@linx.com.au
NT Government	Marine Safety			0408 813 735	08 8924 7100	-
Shipping Agent	Monson Offshore	Dion Robinson	Senior Operations	0448 850 006	08 8947 2570	Darwin@monsonoffshore.com.au
NT Government	NT Emergency Services		Duty Officer	0408 896 245	08 8922 3630	territorydutyofficer.ntes@pfes.nt.gov.au
Environmental Svs	NT EPA	Leonie Cooper	Marine Pollution Legislation	1800 064 567	08 8924 4218 08 8924 4208	pollution@nt.gov.au leonie.cooper@nt.gov.au
Emergency Svs	NT Fire & Rescue		Watch Commander	0427 363 187	08 8946 4109	firewatchcommanders@pfes.nt.gov.au
Emergency Svs	NT Fire & Rescue		Territory Duty Officer	0439 417 133	08 8946 4151	fireTDO@pfes.nt.gov.au
Emergency Svs	NT Police				08 8999 0800	-
Environmental Svs	NTRS	Amber Lowe	Operations Supervisor	0477 266 020	08 8984 1500	operations@ntrs.com.au
Shipping	OM Manganese	Ian Wright	Port Supervisor	0429 676 790		ian.wright@ommanganese.com.au
NT Government	Parks and Wildlife NT	Kristen Hay	Director Wildlife Operations	0448 482 561	8995 5038	Kristen.hay@nt.gov.au
NT Government	Parks and Wildlife NT	Peter Ross	Chief Wildlife Ranger	0447 310 980	8995 5053	Peter.ross@nt.gov.au
NT Government	Parks and Wildlife NT	Tom Nichols	Chief Wildlife Ranger – Crocodile Management	0401 118 776	8983 2475	Tom.nichols@nt.gov.au
Engineering	Pearl Marine Engineering				08 8901 2000	admin@dsre.com.au
Poisons Information	Poisons Information Centre				13 11 26	-
NT Government	Pollution Hotline		(24x7)		1800 064 567	pollution@nt.gov.au
Transport & Logistics	Qube	Scott Sims	Operations Manager	0401 542 089	08 8922 2300	scott.sims@qube.com.au
Transport & Logistics	Rentco				08 8947 4187	-
Medical	Royal Darwin Hospital				08 8922 8888	-
LNG Terminal	Santos	David Power	Marine Superintendent	0455 084 972	08 8919 1992	David.Power@santos.com

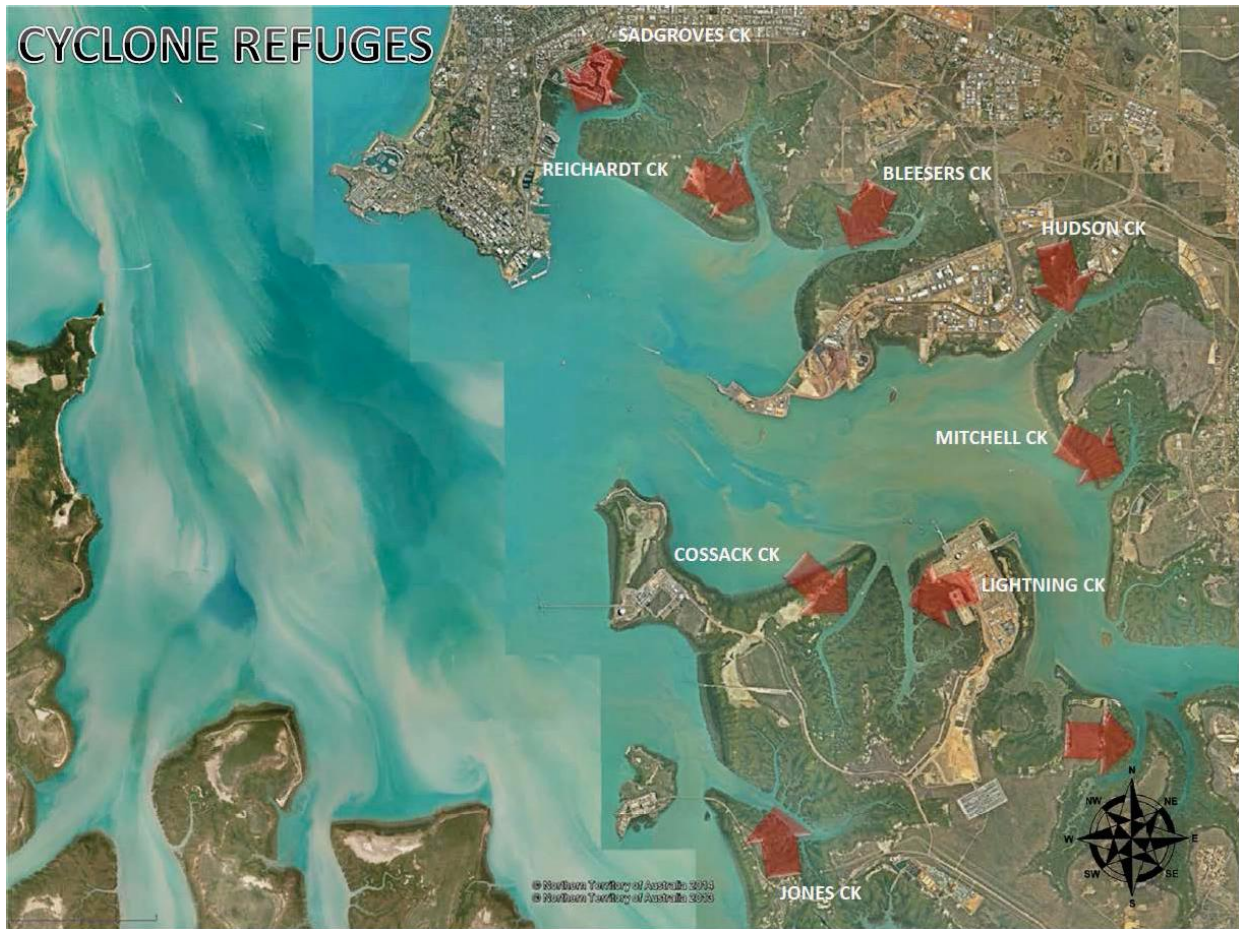
Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 36 of 42

CYCLONE PROCEDURE 2020-21

CATEGORY	COMPANY	NAME	POSITION	MOBILE	OFFICE	EMAIL
Marine Service Provider	Sealink NT (Mandorah Ferry)		Operations Manager	0456 902 637	1300 130 679	lee.fitch@sealink.com.au
Marine Service Provider	Seaswift	Keith De Saram	Operations Support	0456 857 157	08 8935 2400	keithd@seaswift.com.au
Marine Service Provider	Serco	Julie Latimore	Operations Manager	0411 073 880	08 8935 5614	julie.latimore@serco-ap.com
Marine Service Provider	Shorebarge	Meegan Chandler	Barge Supervisor	0475 743 471	8932 3344	mchandler@shorelandsgroup.com.au
Emergency Svs	St Johns Ambulance		General Enquiries		08 8922 6200	-
Marine Service Provider	Svitzer Tugs	Matt Wheeler Tug Control	Port Manager Afterhours	0418 261 354 0408 603 253	08 7929 1100	matthew.wheeler@svitzer.com
Marina	Tipperary Waters Marina	Dani Matthews	Lockmaster	0407 075 077		tipperarywatersmarina@bigpond.com
Transport & Logistics	Toll Remote Logistics	Catherine Byrne	Port Manager On-Call contact	0437 305 8890429 380 850		Catherine.byrne@tollgroup.com
Environmental Svs	Toxfree				1300 869 373	info@toxfree.com.au
Environmental Svs	Transpacific Cleanaway		Emergency Spills Hotline		08 8935 1111 1800 774 557	-
Environmental Svs	Veolia Environmental	Roger Gorge	Transport Manager	0409 328 052	08 8947 8947	roger.gorge@veolia.com.au
Misc	Vopak	Paul Birch Scott Kernahan	Terminal Manager Darwin Safety Co-Ordinator	0437 001 855 0437 839 789	08 8999 9121 08 8999 9104	Paul.birch@vopak.com scott.kernahan@vopak.com
Environmental Svs	Waste Solutions				08 8947 3388	-
Emergency Svs	Water Police				08 8922 3344 131 444	-
NT Government	WorkSafe	Work Place Health & Safety	For all accident notification, general enquiries & complaints		1800 019 115	ntworksafe@nt.gov.au

Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 37 of 42

APPENDIX 2 - CYCLONE REFUGES



Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 38 of 42

APPENDIX 3 - DP RADIO CALL SIGNS

DP VHF Marine Radio Call Signs		
CALL SIGN	TITLE / INSTALLATION	DP STAFF MEMBER
Norport 1	General Manager Operations	Capt. Ian Niblock (PMO)
Norport 2	Marine Pilot	Capt. Gulshan Rangi (PMO)
Norport 3	Senior Manager Marine Services	Gary Bawden (PMO)
Norport 4	Fort Hill Wharf*	Duty - Maritime Security Guard
Norport 5	Shipping Scheduler	Mark Kershaw (SS)
Norport 6	Marine Pilot	Capt. Tobias Akesson
Norport 7	Engineering Project	Alastair Black
Norport 8	East Arm Wharf	Duty - Maritime Security Guard
Norport 9	General Manager Facilities	Peter Raines
Norport 10	Marine Pilot	Capt. Sadiq Haque
Norport 11	Marine Pilot	Capt. Scott Wilson
Norport 12	Marine Pilot	Capt. Ben Tan
Norport 13	Cargo Manager	Des Blanch (PMO)
Norport 14	Marine Pilot	Capt. Andrew Scott
Norport 15	Port Security Officer	Jack Lawrence (PSO)
Norport 16	Marine Pilot	Capt. Ian Brokenshire
Norport 17	Marine Pilot	Capt. Chris Cridland
Norport 18	Marine Pilot	Capt. Luca Ferro (PMO)
Norport 19	Marine Pilot	Capt. Bernardo Obando (PMO)
Norport 20	Marine Pilot	Spare
Norport 21	Cargo Officer	Duty - Cargo Officer (DCO)
Darwin Harbour Control	Darwin Harbour Control	Duty - Harbour Control Officer (HCO)
John Grice	Pilot Boat	Duty - Pilot Boat Master (PBM)
Lamaroo	Pilot Boat	Duty - Pilot Boat Master (PBM)
*Fort Hill Wharf Gatehouse only staffed on an as required basis.		

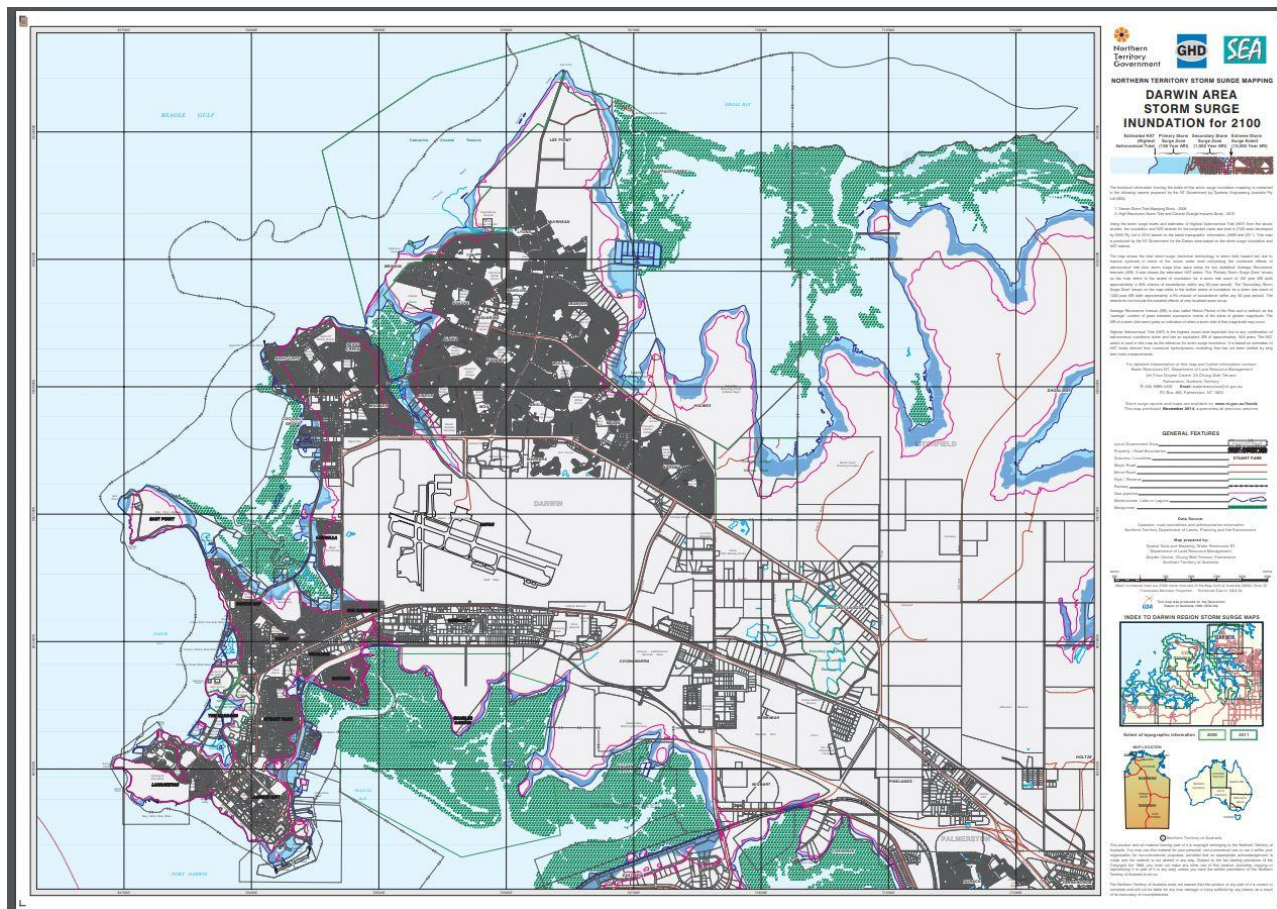
APPENDIX 4 - VHF CHANNELS

The following are VHF radio channels used in the Port of Darwin

Channel	Used By	Type of Use
06	Frances Bay Mooring Basin Lockmaster	Communication with vessels entering or leaving Frances Bay Mooring Basin
08	Tipperary Waters Lockmaster	Communications with vessels entering or leaving Tipperary Waters Marina
09	Darwin LNG	Wickham Point Operations
10	All Vessels	Darwin Harbour Control working channel and primary Port Operations
11	Cullen Bay Lockmaster	Communication with vessels entering and leaving Cullen Bay Marina.
12 and 13	Tugs	Ship manoeuvring with the assistance of tugs
14 and 69	Naval vessels	Navy port working frequency
16	All vessels	[International] distress, safety and calling
17	Hudson	Ship-to shore channel for vessels working on Hudson Creek
88	INPEX LNG	Bladin Point Operations
67	All Vessels	Coast Radio Darwin – Weather information Channel (0803hrs and 1803hrs)
68	Bayview Marina Lockmaster	Communications with vessels entering or leaving Bayview Marina.
72	All vessels	Ship to Ship, Customs to Quarantine
73	Yachts	Yacht racing and regattas
74	Darwin Marine Supply Base	Darwin Marine Supply Base Operations

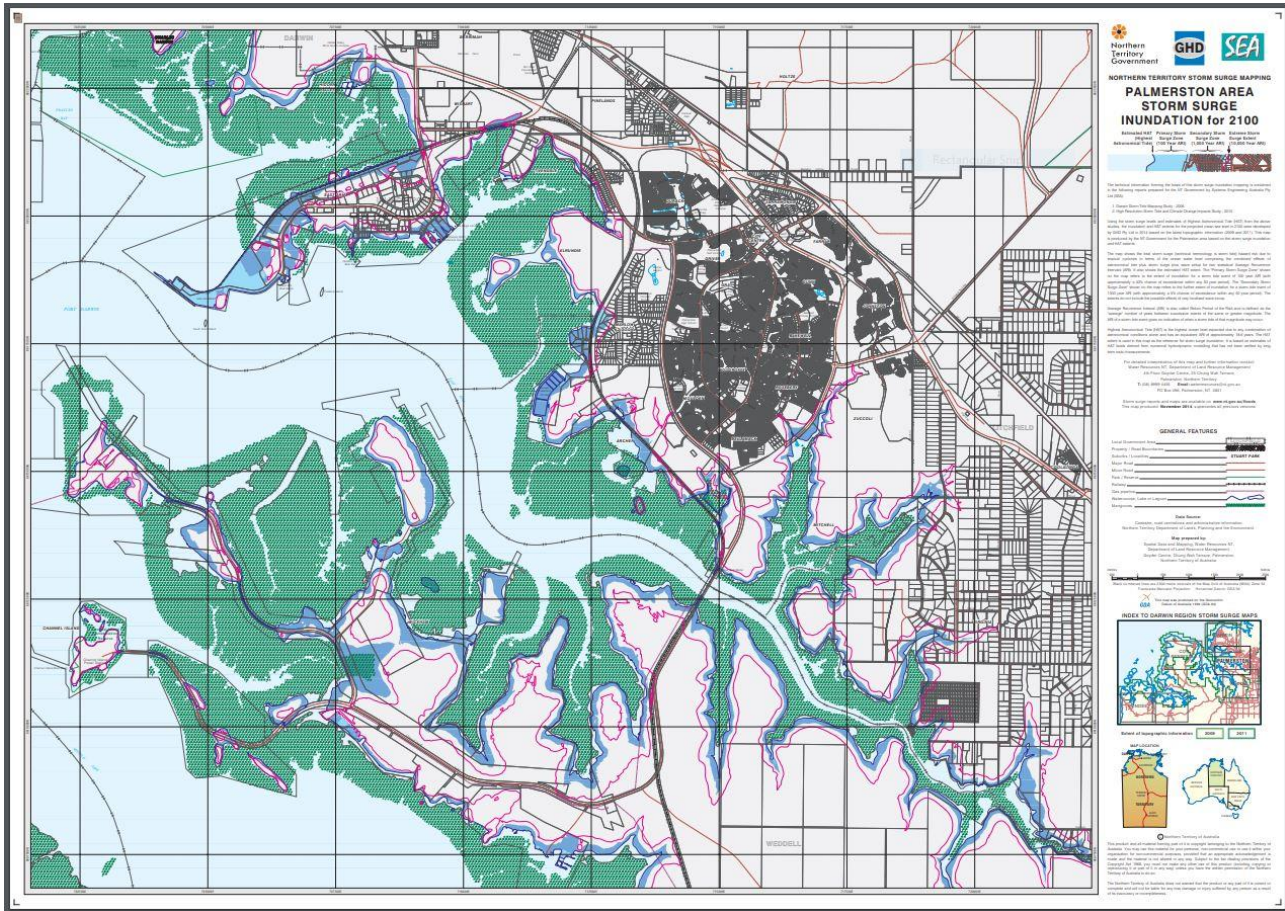
Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP_OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 40 of 42

APPENDIX 5: - STORM SURGE INUNDATION 2014



Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 41 of 42

APPENDIX 5: - STORM SURGE INUNDATION 2014 cont.



Revision no:	10	Review date:	14/08/20	Reviewed by:	SMMS	SOP OPS/40
Finalised date:	TBC	Next review:	08/20	Authorised by:	GMO/CEO	Page 42 of 42