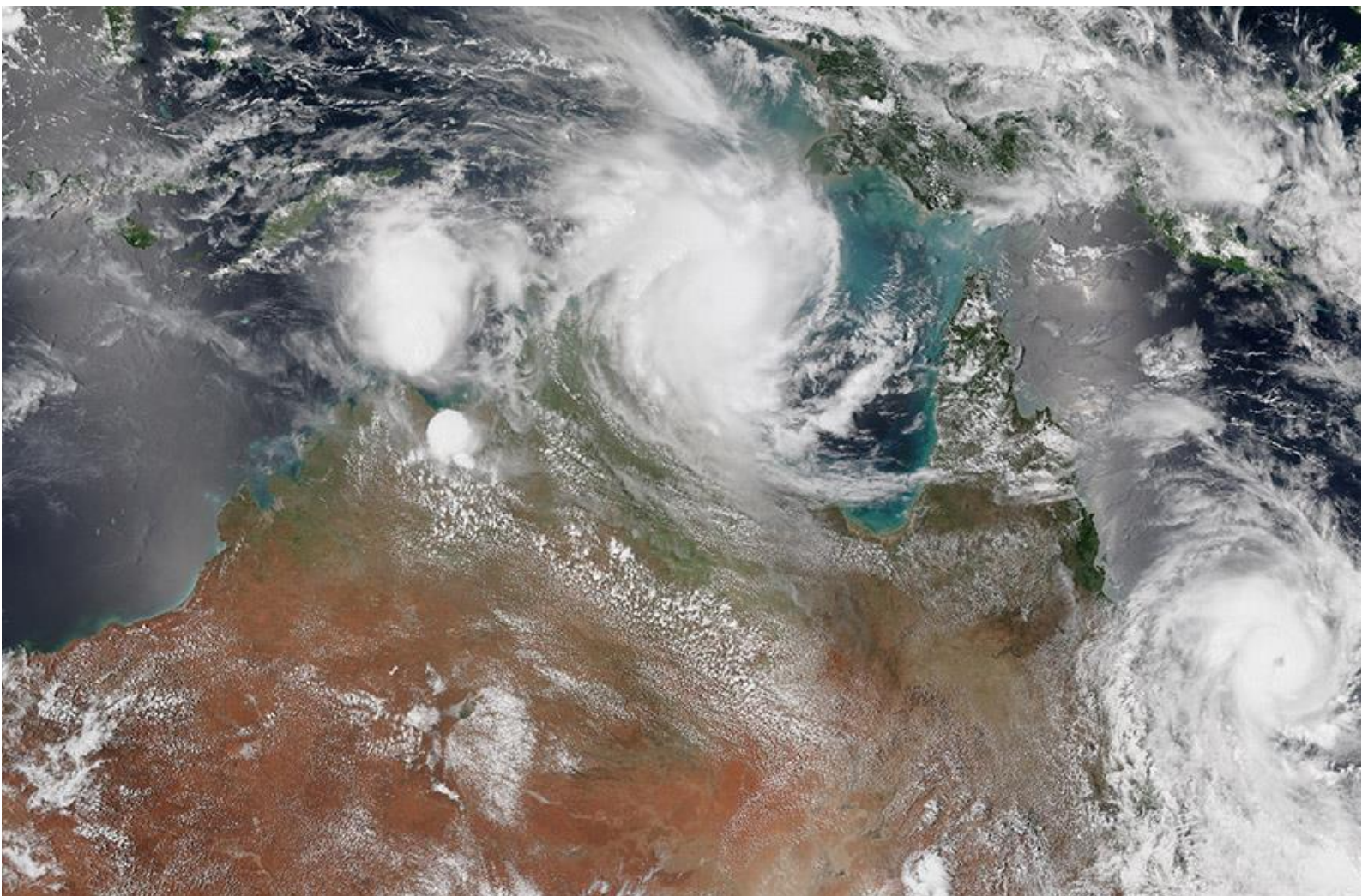


CYCLONE PLAN

2021-2022



| STAGE | DESCRIPTION | DP ACTIONS | PORT STATUS |
|------------|---|---|--|
| Pre-season | Preparation for forthcoming Cyclone Season | Cyclone Plan and Standard Operating Procedures reviewed and updated. Port Users informed of cyclone precautions. Revised Cyclone Plan distributed to staff and stakeholders. | Open |
| Stage 1 | Cyclone Watch (48 Hours) | Actions as per Stage One requirements in Cyclone Plan. 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 Plan. 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 Plan. 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 Plan updated where necessary. | Open |

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INTRODUCTION

The Darwin Port Cyclone Plan 2021-2022 (Cyclone Plan) 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 Cyclone Plan sets out DP's 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 Plan are to:

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

This Cyclone Plan has been developed in consideration of the *Territory Emergency Plan*.

ENDORSEMENT AND APPROVAL

The Darwin Port Cyclone Plan 2021-2022 is endorsed by:



General Manager Operations
IAN NIBLOCK

Date: 22 November 2021

The Darwin Port Cyclone Plan 2021-2022 is approved by:



Chief Executive Officer
DARREN LAMBOURN

Date: 24 November 2021

DOCUMENT CONTROL

The Cyclone Plan 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 Plan 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:

VERSION CONTROL

| Version | Date | Position | Name | Reason for Amendment |
|---------|----------|----------|-----------------|--|
| 9.0 | 30/10/19 | CEO | Darren Lambourn | Approval |
| 9.1 | 14/08/20 | SMMS | Gary Bawden | 2020/21 Review and update |
| 9.2 | 14/08/20 | GMO | Ian Niblock | Elaborate cyclone operations considerations and communications |
| 10.0 | 03/11/20 | CEO | Darren Lambourn | Approval |
| 10.1 | 14/10/21 | GMO | Ian Niblock | Enhancements from annual Stakeholder exercise |
| 10.2 | 17/11/21 | GMO | Ian Niblock | Feedback from Leadership Group review |
| 11.0 | 24/11/21 | CEO | Darren Lambourn | Approval |

DISTRIBUTION

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

The Cyclone Plan is available to download from the Darwin Port website:

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

GLOSSARY

| | |
|--------|--|
| AB | Administration Building |
| BOM | Bureau of Meteorology |
| CDC | Counter Disaster Council |
| CEO | Chief Executive Officer |
| CEO EA | Executive Assistant to the Chief Executive Officer |
| CMT | Crisis Management Team |
| CWM | Cyclone Worksite Managers |
| DAWR | Department of Agriculture and Water Resources |
| DCM | Department of the Chief Minister |
| DIPL | Department of Infrastructure, Planning and Logistics |
| DLNG | Darwin LNG |
| DP | Darwin Port |
| EAAB | East Arm Administration Building |
| EADC | East Arm Operations Buildings (Demountable City) |
| EAW | East Arm Wharf |
| EAWG | East Arm Wharf Gatehouse |
| EAWWS | East Arm Wharf Workshop |
| ECMP | Emergency Crisis Management Plan |
| EM | Environmental Manager |
| FHW | Fort Hill Wharf |
| GMBSS | General Manager Business Support Services |
| GME | General Manager Engineering |
| GML | General Manager Legal |
| GMO | General Manager Operations |
| GMTP | General Manager Trade and Property |
| HCC | Harbour Control Centre |
| HCO | Harbour Control Officer |
| IC | Incident Controller |
| ICT | Information & Communications Technology |
| ILNG | INPEX LNG and INPEX LPG and Condensate |
| IMT IC | Incident Management Team - Incident Controller |
| MM | Manager Maintenance |
| MTS | Manager Technology & Systems |
| MWS | Manager Wharf Services |
| NTES | NT Emergency Services |
| NTG | Northern Territory Government |
| NTPFES | NT Police, Fire and Emergency Services |
| OOW | Officer of the Watch (Ships Officer) |
| PB | Pilot Boats |
| PBM | Pilot Boat Master |
| PE | Port Engineer |
| PLO | Port Landside Officer |
| PMO | Port Management Officer |
| RHM | Regional Harbourmaster |
| SBA | Small Boat Anchorage |
| SHW | Stokes Hill Wharf |
| SLO | Superintendent Landside Operations |
| SMLO&S | Senior Manager Landside Operations & Safety |
| SMM | Senior Manager Maintenance |
| MMP | Manager Marine Pilots |
| TC | Tropical Cyclone |

Partnering in growth, connecting people and supporting potential

| | |
|-------|---|
| TRS | Tropical Revolving Storm |
| WHSPL | Work Health Safety and Partnership Lead |
| WM | Wharf Manager |
| WS | Wharf Services |

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

DARWIN PORT 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 ECMP. However, given that cyclone events are usually predicted many hours before their consequences are felt, management tends to be more measured and aimed at preparing for the impact. Recovery from the impact will be managed in accordance with the ECMP.

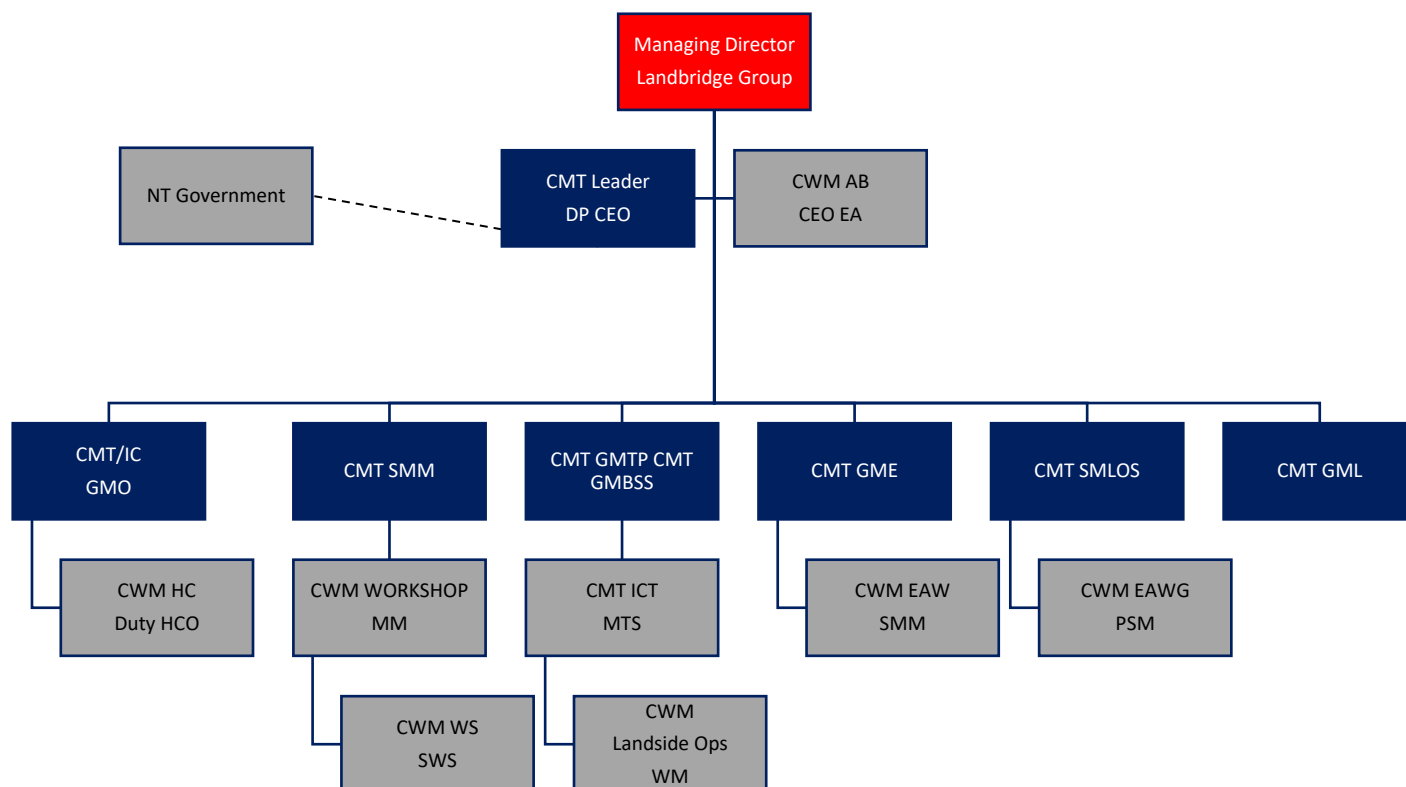


Figure 1 – DP Emergency Management Structure Adapted for Cyclone Events

The *GMO* is the *CMT IC*. The *GMO* has statutory powers as Port Management Officer 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** – Executive Assistant to the Chief Executive Officer
- **SMM** – Senior Manager Maintenance – Vehicles
- **MTS** – Manager Technology & Systems – Information & Communications Technology
- **SLO** – Superintendent Landside Operations – East Arm Wharf Gatehouse
- **MMP** – Manager Marine Pilots – Marine Pilots
- **WM** – Wharf Manager – East Arm Wharf Landside Office
- **MM** – Manager Maintenance – East Arm Wharf Workshop
- **SWS** – Supervisor Wharf Services – Fort Hill Wharf, Pontoon & Fenders

NOTIFICATION OF CLOSURE OF SCHOOLS

On receipt of advice from the CDC that schools have been closed, and subject to approval from their respective general managers, 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.

The Port of Darwin 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 to seek shelter where possible.

Employees with cyclone management responsibilities (including rostered HCO's and PLO'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 FOUR 4 – Safety Management and Lockdown**.

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 Cyclone Plan:

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

The Cyclone Plan 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**.

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 DP.
- Bearing the cost of any damage caused by their vessels to DP infrastructure and/or other vessels.

Masters of all vessels working in the Port of Darwin between 1 November and the 30 April will be advised to familiarise themselves with the current Cyclone Plan 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 this cyclone plan 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.

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 the Port of Darwin.

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 call, by email or in person.

The *RHM* is a regulatory officer and in accordance with the *Ports Management Act 2015*, 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 Cyclone Plan. The Cyclone Plan 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 Cyclone Plan through engagement at the Port User Group forums which are hosted regularly throughout the year by DP.

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 DP is optimised.

These critical stakeholders include but are not limited to:

- Department of Infrastructure, Planning and Logistics (DIPL), 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 (RAN), 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.

Refer to **Appendix 1 - Contact Details**.

Communications during cyclone response

Communication with Port of Darwin stakeholders will be by the *GMTP* using the Contact List at Appendix 1.

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 1 November 2021, 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 Plan.

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 Meeting Room 2 at the DP office on EAW. Alternative venues may be selected during the incident to minimise travel or in the event of damage to the office building.

Microsoft Teams will be used to facilitate safe communications with stakeholders where necessary. The *GMO* will call a Microsoft Teams meeting where stakeholders can join as a video or audio call. **Microsoft Teams** will also be used by the *CMT* to minimise travel and to assist facilitate employees working from home if there is a need to not attend the office.

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 Darwin Port personnel utilising VHF radios is in **Appendix 3 – Darwin Port Radio 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 – DP has an established Facebook account under Darwin Port Operations. DP will use this social media platform to communicate the status of the port and associated operations.

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

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

Darwin Port intranet will be used to provide DP personnel with updates regarding the current port status and its tropical cyclone response, until such time DP offices are closed.

Text Messages - Individual managers will utilise text messages as a means of communicating information to personnel in their teams. Additionally, DP will communicate with, stakeholders and Port users if emergency communication is required.

MEDIA MANAGEMENT

Engagement and interactions with media are coordinated by the *GMTP* and all media enquiries should be directed to the *GMTP* 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

DP monitors numerous weather forecasting sites during the cyclone season 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 Categories 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 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

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 advice 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 2014**

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.

DARWIN PORT 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 for Australasian trade. DP 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. DP 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 type tanks. Most 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.

DARWIN PORT CYCLONE MOORING MANAGEMENT

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

DARWIN PORT 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. |

PRE-SEASON READINESS

| TASK (to be completed prior to 1 November) | Responsible Office | Applicable SWI |
|---|---------------------|----------------|
| 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) is 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 | SLO | |
| Check that first aid supplies and torches are in order and restock as required | WHSPL | |
| 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 | CYC-WI-38 |
| Test lifting apparatus for pilot boat pontoon gangway | SMM | |
| Ensure port stakeholder list is updated and current | GMTP | |
| Advise East Arm, and Fort Hill Wharf tenants that they are required to secure all loose materials in readiness for the cyclone season | GMO | CYC-WI-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 | WM | |
| 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 | CEO EA | |

STAGE ONE – CYCLONE WATCH (48 HOURS)

In line with standard practice for emergency management, DP 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 Crisis Management Team may determine and approve that non-mandatory tasks may be delayed or not undertaken.

| TASK | | RESPONSIBLE OFFICER | APPLICABLE SWI |
|------|--|---------------------|----------------|
| 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 | 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 | CYC-WI-34 |
| M | Warning notice for small boat owners in SBA activated | GMO | CYC-WI-35 |
| M | Activate the cyclone watch notification message on the EAW archway on direction by the CEO or GMO | SLO | CYC-WI-19 |
| M | Maintain normal gatehouse operations | SLO | |
| M | Commence preparations to secure gatehouses at EAW & FHW | SLO | |
| * | Notify contractor of need to remove the awnings from the passenger transfer area at FHW and EAW Ops building 1 | SMM | CYC-WI-30 |
| M | Check the security of cargo shed doors and windows | WM | |
| M | Notify shipping agents and stevedoring companies that all non-essential equipment must be secured | WM | CYC-WI-23 |
| M | Request DAWR to expedite inspection of any DG's containers under Biosecurity control. If unable to clear, remove DG's containers to haul road at stockpile | WM | |
| M | Meet with EAW tenants to discuss anticipated severity of cyclone and to determine actions in respect of stacked containers, refrigerated containers, DG's, 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 | PBM's | |
| * | Make preparations to secure FHW Pilot boat pontoon. Only lift gangway if necessary | PB Master | PIL-SWI-81 |
| M | Check security of the ship loader belting | MM | |
| * | Ensure that all fleet vehicles have been fuelled | MM | |
| M | Ensure bulk diesel tanks are full | MM | |
| M | Ensure oil, water and tyres are checked on all plant | MM | |
| 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. | MM CWM | |
| M | Initiate ICT preparations | MTS | CYC-WI-39 |
| * | Remove Yokohama fenders from water and secure appropriately | SMM | CYC-WI-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 | |

STAGE TWO – CYCLONE WARNING (24 HOURS)

| | TASK | RESPONSIBLE OFFICER | APPLICABLE SWI |
|---|--|---------------------|----------------|
| 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 | CYC-WI-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 | CYC-WI-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 | CYC-WI-36 |
| * | Remove the awnings from the passenger transfer area at FHW and EAW Ops building 1 if this has not been done earlier | SMM | |
| M | Secure FHW plant and equipment | SMM | |
| * | Secure environmental monitoring equipment | EM | CYC-WI-27 |
| * | Secure workspaces | All staff | |
| * | Undertake ICT shutdown procedures | All staff | CYC-WI-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 Administrators | |
| * | Secure the cattle races | WM/PLO | |
| M | Re-check that all loose material has been secured or removed from EAW | WM/PLO | |
| * | Lash and secure all cargo and equipment remaining on the wharves | WM/PLO | |
| M | Instruct stevedores to reduce windage impact on container stacks | WM | |
| M | Re-check all generators are fuelled and operational | MM | |
| M | Re-check all emergency communication equipment is operational and back up batteries are fully charged | MM | |
| M | Ensure the pilot boats are fully fuelled and ready for immediate use | PB Master | |
| M | Check that all communications equipment is operational | Line Managers | |
| * | 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 | PIL-SWI-81 |

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| | | | |
|---|---|-----|-----------|
| * | Remove Yokohama fenders from water and secure appropriately if not done earlier | SMM | CYC-WI-28 |
| M | Brief RHM on DP cyclone response status | GMO | |

STAGE THREE – CYCLONE WARNING (12 HOURS)

| TASK | | RESPONSIBLE OFFICER | APPLICABLE SWI |
|------|---|---------------------|----------------|
| * | 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 | CYC-WI-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 | CYC-WI-21 |
| M | Secure cruise ship terminal and FHW | SLO | CYC-WI-29 |
| M | Secure all gatehouses at EAW and FHW | SLO | CYC-WI-25 |
| M | Secure pilot vessels in the mooring basin – 3m tide dependent | PB Master | |
| M | Close all water valves on FHW and EAW | SMM | |
| M | Isolate backup power generator as required | SMM | CYC-WI-26 |
| M | Close main water valves adjacent to wharf abutments at EAW | WM | |
| M | Ensure you have your CWM and General Manager's contact details | All staff | |
| M | Secure all sheds and offices on EAW | WM/PLO | |
| M | Secure ship loader and belting at EAW | WM/PLO | CYC-WI-18 |
| M | Isolate power to ship loader | WM | |
| M | Await instructions from the CEO or delegate | All staff | |
| M | Brief RHM on DP cyclone response status | GMO | |

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 |

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STAGE FIVE – DESTRUCTIVE WINDS REACH GREATER DARWIN

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

ALL CLEAR PENDING

When All Clear Pending is announced, the following DP personnel 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 |
| SLO | Normal place of work |
| PLO | Rostered Port Landside Officers to report to their allocated workplace |
| HCO | Duty HCOs to report to Harbour Control Centre |
| WM | Normal place of work |
| MM | 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 |
| SMLO&S | Normal place of work |
| EM | Normal place of work |

All 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.

The *GMO* will liaise with Emergency Services and *NTG* Disaster Committees as required.

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.

A central debrief is to be conducted by the *CMT* as soon as practical to develop a recovery plan (refer Post Event Recovery).

The *IMT IC* is to advise the CEO of the current operational situation and provide formal report as soon as possible.

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 DP 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 Darwin Port infrastructure. The severity of the cyclone and its consequences will influence the decision to reopen the port will include an assessment of:

- 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.

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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 Northern Territory 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*.

APPENDIX 1 – Contact Details

OPS-LEG-10

| 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) | David Ciaravolo | CEO | 0415 471 600 | 08 8945 6455 | office@afant.com.au |
| DMSB | ASCO | Kylie Arnel John Cowan | DMSB Manager DWSB Manager | 0418 533 048 0448 148 957 | | Kylie.arnel@ascoworld.com John.cowan@ascoworld.com |
| ABF | Australian Border Force | | Switchboard Marine Logistics | 1300 558 099 (AH) 0419 515 859 | 02 6264 1111 08 8980 6677 | RCU_NC@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 | Cassy Schmidt | Director NT | 0434 590 598 | | darwin@appea.com.au cshmidt@appea.com.au |
| Commonwealth Gov | Australian Transport Safety Bureau (ATSB) | | 24/7 Aviation, Marine, Rail Accident/Incident Notifications | | 1800 011 034 | atsbinfo@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 | Auriga Logistics | Peter Harragon | Vessel Manager | 0447 889 493 | 08 8947 4960 | peter.harragon@auriga.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 |
| BOM | Bureau of Meteorology (BOM) | Shenagh Gamble | Hazard Preparedness and Response (HPR) Manager, NT | 0447 738 138 | 08 8920 3872 | DSS_HPR_NorthWest_NT_Mgr@bom.gov.au |

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| CATEGORY | COMPANY | NAME | POSITION | MOBILE | OFFICE | EMAIL |
|--------------------|--|-----------------------------|---|--|--------------|--|
| Emergency Services | 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 |
| LNG Terminal | Santos | David Power | Marine Superintendent | 0455 084 972 | 08 8919 5102 | David.Power@santos.com |
| ADF | Coonawarra Tower (Navy) | Lieutenant Kristensen | Navy Harbour Master | 0407 612 052 | 08 8935 5420 | Postservices.darwin@defence.gov.au |
| | Office of the Coroner | Alana Carter | Principal Coroner's Clerk | 0409 084 204 | 08 8999 7770 | alana.carter@nt.gov.au nt.coroner@nt.gov.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 | James Ryan | Manager, Emergency Planning | 0456 841 939 | 08 8930 0640 | James.ryan@darwin.nt.gov.au Emergency.Management@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 | 0407 396 983 | 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 | Duty Landside Officer | 0401 110 320 | 08 8919 0816 | security@darwinport.com.au |
| Darwin Port | Darwin Port | Celia Lloyd | General Manager, Business Support Services | 0448 881 362 | 08 8919 0840 | celia.lloyd@darwinport.com.au |
| Darwin Port | Darwin Port | Harbour Control | Duty Control Tower Officer | | 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 |
| Darwin Port | Darwin Port | Jack Lawrence | Superintendent, Landside Operations | 0434 540 108 | 08 8919 0819 | jack.lawrence@darwinport.com.au |

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| CATEGORY | COMPANY | NAME | POSITION | MOBILE | OFFICE | EMAIL |
|-------------------------|---|---------------------------------|--|------------------------------|------------------------------|--|
| 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 | Duty Landside Officer | 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 | Matt Wallach | Managing Director | 0400 686 535 | 07 3020 0965 | matt.wallach@landbridge.com.au |
| Darwin Port | Darwin Port | Peter Dummett | General Manager, Trade & Property | 0401 117 056 | 08 8919 0880 | peter.dummett@darwinport.com.au |
| Darwin Port | Darwin Port | Peter Raines | Senior Manager, Maintenance | 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 | Lee Harris | General Manager | 0420 636 401 | 08 8981 1700 | gm@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 | Alana Madden Jim Bannister | Business Development Manager-SHW Operations Manager - DWC | 0417 169 553 0419 250 593 | 08 8999 5155 | alana.madden@nt.gov.au james.bannister@nt.gov.au |
| NT Government | Department of Infrastructure, Planning and Logistics | Simon Saunders Marine Safety | Executive Director, Transport Safety & Services | 0401 110 092 0408 813 735 | 08 8924 7598 08 8924 7100 | Simon.saunders@nt.gov.au |
| NT Government | Department of Industry, Tourism & Trade - Mining & Energy | Louis Gomas | Senior Director Petroleum Operations | 0447 046 435 | 08 8999 6030 | louis.gomas@nt.gov.au |

APPENDIX 1 – Contact Details

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| CATEGORY | COMPANY | NAME | POSITION | MOBILE | OFFICE | EMAIL |
|-------------------------|--|--|--|--|--|---|
| 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 DOF Asia Pacific Team Duty Manager | 0437 158 614 0419 920 895 | 08 9278 8779 | carole.cartledge@dofsubsea.com |
| NT Government | Emergency Services (Police/Fire/Amb) | | Emergency non-Emergency | | 000 - 112 from mobile) 131 444 | |
| Marina | Frances Bay Marina (Duck Pond) Lock | Angus Armstrong Greg Hocking Ana McKay FBMB After Hours Small Ship Scheduler | Manager Supervisor Business Officer Duty Call Out | 0438 924 274 0428 207 612 0427 910 220 | 08 8924 7509 08 8922 0617 08 8922 0617 | angus.armstrong@nt.gov.au gregory.hocking@nt.gov.au FBMB.DIPL@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 Jon Abbey | Regional Harbour Master Deputy Regional Harbour Master | 0428 181 480 0417 549 023 | 08 8999 3867 08 8924 7101 | Anil.chadha@nt.gov.au jon.abbey@nt.gov.au |
| LNG Terminal | INPEX | Jamie Collins | Terminal Ops Coordinator LNG1 Panel – LNG Loading (24Hr) LNG2 Panel -LPG Loading (24Hr) Utilities Panel – C. Loading (24Hr) | 0421 555 291 | 8983 8110 8983 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 |

APPENDIX 1 – Contact Details

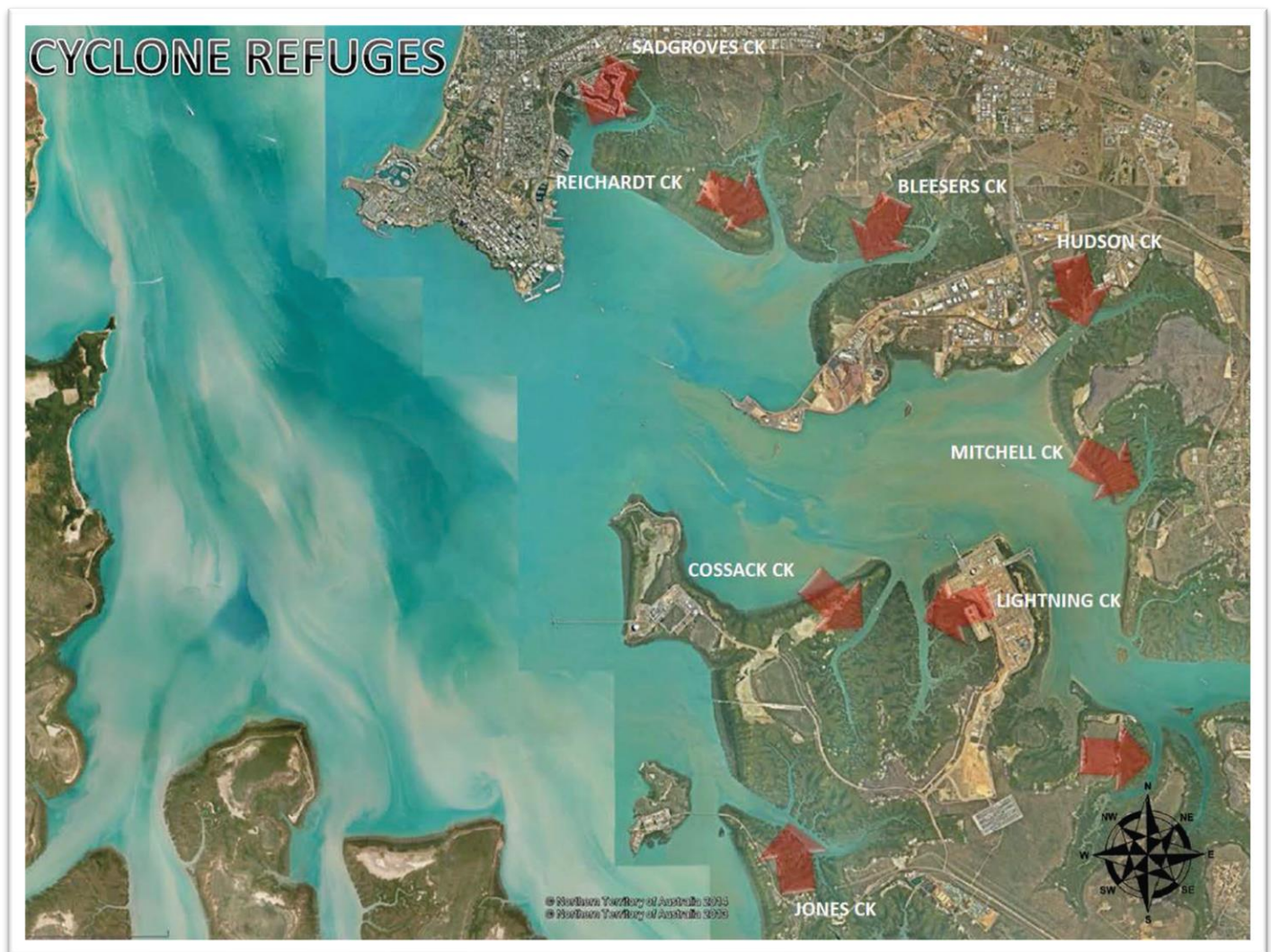
OPS-LEG-10

| CATEGORY | COMPANY | NAME | POSITION | MOBILE | OFFICE | EMAIL |
|-----------------------|------------------------------|--|---|--|------------------------------------|--|
| | Intertek | Richard Lewis Darryn Kissick | Branch Manager Ops Supervisor | 0409 596 875 0409 898 438 | 08 7913 7546 | richard.lewis@intertek.com darryn.kissick@intertek.com |
| 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@linxcc.com.au j.cole@linxcc.com.au p.brewster@linxcc.com.au |
| NT Government | Marine Safety | | | 0408 813 735 | 08 8924 7100 | |
| Shipping Agent | Monson Offshore | Dion Robinson Anthony Cendo | Senior Shipping Operations Shipping Operations | 0448 850 006 0424 555 154 | 08 8947 2570 | Darwin@monsonoffshore.com.au |
| NT Government | NT Emergency Services (NTES) | Mark Cunnington | Regional Manager Duty Officer | 0427 003 857 0408 896 245 | 08 8922 3638 08 8922 3630 | mark.cunnington@pfes.nt.gov.au territorydutyofficer.ntes@pfes.nt.gov.au |
| Environmental Svs | NT EPA | On-call environmental officer | On-call environmental officer | 1800 064 567 | 8924 4218 (during office hours) | pollution@nt.gov.au |
| Emergency Svs | NT Fire & Rescue | | Watch Commander | 0427 363 187 | 08 8946 4109 | firewatchcommanders@pfes.nt.gov.au |
| Emergency Svs | NT Police | | | | 08 8999 0800 | |
| Environmental Svs | NTRS | Elle Jackman | Service Officer | 0477 266 020 | 08 8984 1500 | operations@ntrs.com.au |
| Shipping | OM Manganese | Craig Wright | Port Supervisor | 0418 450 326 | 08 8962 0201 | craig.wright@ommanganese.com.au |
| NT Government | Parks and Wildlife NT | Kristen Hay | Director Wildlife Operations | 0448 482 561 | 08 8995 5038 | Kristen.hay@nt.gov.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 | |

APPENDIX 1 – Contact Details

OPS-LEG-10

| CATEGORY | COMPANY | NAME | POSITION | MOBILE | OFFICE | EMAIL |
|-------------------------|-----------------------------|-------------------------------------|--|------------------------------|------------------------------|--|
| Medical | Royal Darwin Hospital | | | | 08 8922 8888 | |
| 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 Defence | Edward Timson | Operations Manager | 0417 073 879 | 0411 073 880 | dmss.coonawarra@serco-ap.com |
| Marine Service Provider | Shorelands | Meegan Chandler Richard Chandler | Barge Manager Operations Manager | 0475 743 471 0477 878 128 | 8932 3344 | mchandler@shorelandsgroup.com.au supervisor@shorebarge.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 305 889 0429 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 | Workplace Health & Safety | For all accident notification, general enquiries & complaints | | 1800 019 115 | ntworksafe@nt.gov.au |
| Transport & Logistics | Toll Global Express | Dale Harman Travis Humm | Branch Manager PM Operations Manager | 0418 307 286 0401 691 462 | 08 8944 1000 | dale.harman@tollgroup.com travis.humm@tollgroup.com |



APPENDIX 3 – Darwin Port Radio Call Signs

OPS-LEG-10

| 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 |
| Norport 3 | Spare | |
| Norport 4 | SM Landside Operations and Safety | Wayne Bodkin (PEO) |
| Norport 5 | Shipping Scheduler | Mark Kershaw |
| Norport 6 | Marine Pilot | Capt. Tobias Akesson |
| Norport 7 | Spare | |
| Norport 8 | Sup. Landside Operations | Jack Lawrence |
| Norport 9 | Senior Manager Maintenance | 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 | Wharf Manager | Des Blanch (PMO) |
| Norport 14 | Marine Pilot | Capt. Andrew Scott |
| Norport 15 | Marine Pilot | Spare |
| Norport 16 | Marine Pilot | Capt. Ian Brokenshire |
| Norport 17 | Marine Pilot | Capt. Chris Cridland |
| Norport 18 | Marine Pilot | Capt. Luca Ferro |
| Norport 19 | Spare | |
| Norport 20 | East Arm Wharf | Duty - Port Landside Officer |
| Norport 21 | Spare | |
| Darwin Harbour Control | Darwin Harbour Control | Duty - Harbour Control Officer |
| PV Osprey | Pilot Boat | Duty - Pilot Boat Master |
| Lamaroo | Pilot Boat | Duty - Pilot Boat Master |
| | | |
| *Fort Hill Wharf Gatehouse only staffed on an as required basis. | | |

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 |
| 87 and 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 |

