

**Forth Ports Limited Port of
Dundee**

Marine Guidelines and Port Information

December 2019

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| FORTH PORTS LIMITED | Document ID FP PMSC OP 15/12 | Authorised By HMD | Original Date April 2019 |
| Marine Guidelines and Port Information (Tay) | Date Revised December 2019 | Revised By MOD | Review Due April 2022 |

LIST OF AMENDMENTS

| DATE | DETAILS OF CHANGES | PAGE NUMBER |
|-------------------------------|---|--------------------|
| 23 rd April 2019 | NEW EDITION | |
| 21 st August 2019 | New layout and addition of survey names and dates of surveys | 19 |
| 5 th December 2019 | Addition of Dundee Passenger Vessel Guidelines to Section 1.3 | 6 |
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APPLICATION

These guidelines apply to all vessels over 40m in length unless otherwise stipulated. Vessels under 40m in length when operating on the Tay should operate and maintain an appropriate safety management system.

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1 DOCKING AND SAILING GUIDELINES

1.1 Introduction

The following revised guidelines have been drawn up for the Port of Dundee.

The guidelines form part of the formal risk assessment process and are continuously under review in the light of operational experience. There has been extensive consultation between the Port Authority and the Dundee Pilots while producing these guidelines.

It is not intended that these guidelines are a rigid set of regulations or rules to be followed on all occasions, they are intended as guidance to ships Masters, Agents, Pilots and the Port Authority to allow safe and effective scheduling of vessels.

Further discussions on some occasions may be required between the Duty Pilot, Forth and Tay Navigation Service and the vessel's Master, taking into account the prevailing weather and tidal conditions and any other special circumstances.

The final decision on the number of tugs required rests with the Master of the vessel, in consultation with the Pilot.

However the Port Authority reserves the right to require a vessel to take a tug or comply with any special instruction which may be considered necessary according to the particular circumstances of the case.

The following assumptions have been made in preparing these guidelines:

- Standard Ship – single screw with no bow/stern thrusters, high efficiency rudder or other manoeuvring aids.
- Favourable weather conditions.
- Tidal Ranges within predicted limits.
- No adverse local activity and/or conditions.

Non-standard vessel will be assessed on an individual basis.

The Guidelines are presented in a tabular form; the tables contain an identification letter indicating tidal constraints followed by a numerical indication of the number of tugs recommended.

1.2 Pre-Arrival

Shipping traffic in the Firth of Tay and within the port limits of the Port of Dundee, are managed by the Forth and Tay Navigation Service. Vessels must advise of their arrival by submitting a Proposed Vessel Movement form through their nominated agents.

Vessels must call Dundee Harbour Radio on VHF Channel 12 at least one hour from the Fairway Buoy.

All vessels over 90 metres and all laden tankers irrespective of size board their pilot at the

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fairway buoy. Vessels 90 metres or less, can board their pilot at the Lady Buoys.

Vessels bound for Perth will pass through the port limits and through the Tay Road and Tay Rail Bridges before changing the Dundee Pilot at Balmerino, which is the western limit of the Port of Dundee.

1.3 Berthing Requirements

The information detailed below refers to **Standard Ships**, which are single screw with no bowthruster. Standard meteorological conditions of maximum wind **gusts** not exceeding 25 knots and good visibility also apply.

U Unrestricted **F** Not during ebb
Numerical indicates tug numbers

These guidelines should be regarded purely as a starting point for discussions with the Port Authority, Duty Pilot, Master and Agent on tug allocation and scheduling. Actual tug allocation may be increased or reduced as appropriate. The guidelines should not be construed as any form of regulations.

| Vessel Length (metres) | Tugs # | | | |
|---------------------------|-------------------------------------|------|----------|-----|
| | Inbound | | Outbound | |
| | Flood | Ebb | Flood | Ebb |
| <90m | U0 | U0 | U0 | U0 |
| 90 – 120m | U0* | U0* | U0* | U0* |
| 120 – 150m | U1** | U1** | U1 | U1 |
| 150 – 180m | U2 | F | U2 | F |
| >180m | U3 | F | U2 | F |
| Oil Rigs | Rig Move Guidelines | | | |

* No tug required unless standard vessel 110m –120m, which may require a tug for berthing port side to. This is to be agreed in advance between, Harbour master, Pilot and Agent.

** “Reefer” standard vessels over 120m berthing port side to will require 2 tugs for berthing.

- Tidal range: Spring 4.8m, Neap 2.2m
- Slack Water is HW - 6
- Scheduled times are: Inbound – Fairway buoy, Departure – from berth
- Minimum Under Keel Clearance: 0.5m
- Recommended Bollard Pull will be catered for in a separate document

Pilots should report to FTNS on vessel manoeuvrability after first visit for comment entry into IPOS.

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Passenger Ship Guidelines

A passenger vessel is assumed to have a bow thruster, twin screw & rudders or Azipods.

Vessels not meeting these criteria will be categorized according to the Cruise Liner Information Form which should be completed and returned before submission on a Proposed Vessel Movement (PVM) Form.

The following guidelines are based on Cruise Vessels with **no tugs**, further consideration/discussions can be given to scheduling arrival & departure times should a tug(s) be utilized. They are also subject to meteorological conditions with maximum wind gusts of **20** knots.

Dundee Times

Arrival: at the Fairway buoy (**POB - Berth - 1.5 hours, Flood tide**)
(**POB - Berth - 2 hours, Ebb tide**)

Departure: Depart Berth

Pilots can report to FTNS on vessel maneuverability after first visit for comment entry into IPOS.

Class A - Length < 120m

| Arr | -6 | -5 | -4 | -3 | -2 | -1 | HW | +1 | +2 | +3 | +4 | +5 | +6 |
|------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Neap | | | | | | | | | | | | | |
| Spring | | | | | | | | | | | | | |

| Dep' | -6 | -5 | -4 | -3 | -2 | -1 | HW | +1 | +2 | +3 | +4 | +5 | +6 |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Neap | | | | | | | | | | | | | |
| Spring | | | | | | | | | | | | | |

Class B - Length 120 - 180m

| Arr' | -6 | -5 | -4 | -3 | -2 | -1 | HW | +1 | +2 | +3 | +4 | +5 | +6 |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Neap | | | | | | | * | * | | | | | |
| Spring | | | | | | | * | * | | | | | |

| Dep' | -6 | -5 | -4 | -3 | -2 | -1 | HW | +1 | +2 | +3 | +4 | +5 | +6 |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Neap | | | | | | | * | | | | | | |
| Spring | | | | | | | * | | | | | | |

Class C - Length > 180m

| Arr' | -6 | -5 | -4 | -3 | -2 | -1 | HW | +1 | +2 | +3 | +4 | +5 | +6 |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Neap | | | | | | | | | | | | | |
| Spring | | | | | | | | | | | | | |

| Dep' | -6 | -5 | -4 | -3 | -2 | -1 | HW | +1 | +2 | +3 | +4 | +5 | +6 |
|-------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Neap | | | | | | | | | | | | | |
| Spring | | | | | | | | | | | | | |

*** Amber segments requires pilot consultation**

For vessels/tides which are borderline, consult Harbour Master/Pilot

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1.4 Towage Minimum Bollard Pull Requirement

The following tables are a guide to the minimum combined bollard pull requirement for tug allocation in conjunction with the Port of Dundee Berthing and Sailing Guidelines and “Voluntary Tug Code”. As with the code these tables are guidelines and are not intended as a rigid set of rules and regulations. Certain vessels may require a higher level of towage than indicated below depending on the weather, manoeuvrability of the vessel and the state of the tide.

When allocating 2 or more tugs to a job, consideration must be given to the mix of tugs to ensure that there is an appropriate balance with the tugs employed.

| | 1 Tug | 2 Tugs | 3 Tugs | 4 Tugs |
|--------------------|--------------|---------------|---------------|---------------|
| 90m - 120m | N/A or 20t* | N/A | N/A | N/A |
| 120m – 150m | 20t | 40t | N/A | N/A |
| 150m - 180m | 20t | 40t | N/A | N/A |
| > 180m | N/A | 50t | 70t | N/A |

* Standard vessel 110m – 120m may require a tug for berthing port side to

1.5 Tug Fleet

The following tugs operate on the Forth and Tay

| Company | Tug Name | Bollard Pull | Type | LOA | Beam | Draft |
|--|-----------------|---------------------|-----------------------|------------|-------------|--------------|
| Forth Estuary Towage - Leith | Fidra | 50t | Voith | 30.0m | 11.0m | 5.3m |
| | Oxcar | 30t | Voith | 30.0m | 9.0m | 4.6m |
| | Seal Carr | 19t | Voith | 28.8m | 8.6m | 4.0m |
| | Craigeith | 70t | ASD | 28.2m | 13m | |
| BP/Targe Towing – Hound Point | Hopetoun | 124t | ASD | 43.5m | 13.5m | 6.7m |
| | Crammond | 62t | ASD | 34.3m | 10.5m | 4.6m |
| | Dalmeny | 62t | ASD | 34.3m | 10.5m | 4.6m |
| | Corringham | 68t | ASD | 32.0m | 11.7m | 5.2m |
| Caledonian Towage – Invergordon | Strathdon | 65t | ASD | 32.5m | 11.4m | 4.4m |
| | Strathdee | 65t | ASD | 32.5m | 11.4m | 3.60m |
| Targe Towing Dundee/Aberdeen | Collie T | 20t | Twin screw nozzles | 26m | 10m | 4.0m |
| | Kittiwake | 62t | ASD | 24m | 11.3m | 5.1m |

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1.6 Abort Practice

The criteria set out within this document have been agreed following risk assessment and consultation with the appropriate parties. There may however be occasions when Masters or Pilots have concerns over the prevailing conditions. They may therefore consider that it would be prudent to abort the operation before the limits in these guidelines are reached. These decisions can only be made at the time by the Master and Pilot after assessing the situation and the circumstances of any particular case. Masters and Pilots are reminded that discussion and agreement of an appropriate abort position is an integral part of every passage plan.

1.7 Vessel Operator Restrictions

Vessels are scheduled into / out of ports on the Forth & Tay in accordance with the under keel clearance and scheduling criteria specified in this document.

Vessel operators who require additional restrictions such as increased under keel clearance margins, over and above those required by the port, must ensure that these requirements are specified to FTNS at the time of booking the vessel's arrival/departure. This is to ensure that vessels are booked for the correct time, and to ensure that unnecessary delays or impacts to the shipping schedule are avoided.

Agents are required to ascertain specific requirements prior to making arrival or departure bookings through FTNS.

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2 WEATHER PARAMETERS

2.1 Minimum Visibility Criteria

| Vessel Size (meters) | Berthing (Distance miles) | Sailing (Distance miles) |
|----------------------|---------------------------|--------------------------|
| <90m | 0.5 | 0.25* |
| 90m – 150m | 0.5 | 0.25* |
| 150m + | 0.5 | 0.5 |
| Oil Rigs | 2.0 | 2.0 |

* Vessels transiting bridges minimum 0.5 miles

2.2 Wind Parameters

Wind speed is for a steady wind, measured from the most appropriate anemometer position. Anemometers are located at Buddon Ness, Port Control, Tay Road Bridge and hand held.

| Vessel Size (meters) | Wind Parameters (knots) | |
|----------------------|---|---------|
| | Berthing | Sailing |
| <90m | At discretion of duty Pilot (transit vessels <= 40kts) | |
| 90m – 150m | At discretion of duty Pilot | |
| 150m + | <=25kts | <=25kts |
| Oil Rigs | <=15kts | <=15kts |

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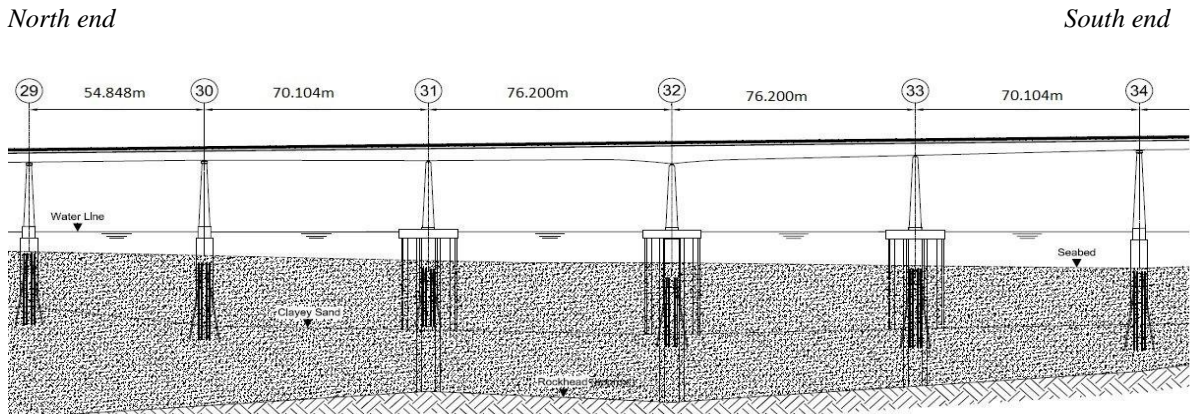
3 TAY ROAD BRIDGE

The maximum permissible air draft to transit the Tay Road Bridge is **less than 22m**.

The minimum visibility for vessels transiting the bridge is 0.5 nautical miles. When the Tay Road Bridge is not visible from Port Control visibility is less than 0.5 miles

The Road Bridge has additional fendering on the piers, which act as the main navigation channel numbered as below. The fendering is comprised of sacrificial concrete structures, which have low-level blue lighting to indicate their outline along with the charted navigation lights.

The channels between Piers 30 and 31 and between Piers 33 and 34 are not to be used except in an emergency.



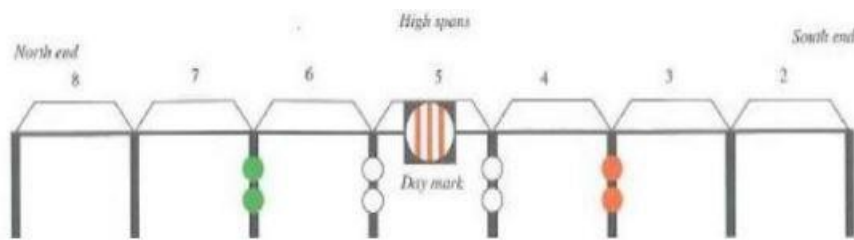
It should be noted that the transit between the bridges should not be attempted without local knowledge.

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4 TAY RAIL BRIDGE

The maximum permissible air draft to transit the Tay Rail Bridge is **less than 22 metres**.
 The minimum visibility for vessels transiting the bridge is 0.5 nautical miles

The main navigation channel through the bridge is through the fifth raised span from the South end of the bridge. This span is marked with 2 fixed white lights and a day signal of a circle with red and white vertical stripes.



Obstructions exist in the vicinity of the 4th span and this span should only be used with caution. It should be noted that the transit between the bridges should not be attempted without local knowledge.

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5 PRECAUTIONARY AREA, PIPELINES and CABLES

A military exercise area exists at Buddon Ness. Ranges fire west south west and south across Monifieth Bay and east across Carnoustie Bay. Firing is only undertaken when the area is clear of shipping

A natural gas pipeline runs from the north bank at Monifieth (56°28.83'N 002°47.92'W) to Tentsmuir Point (56°26.61'N 002°49.62'W) on the south and is marked by yellow beacons at either side.

There are two Submarine cable areas bounded within the following points:

| <u>Cable Area</u> | | <u>North Side</u> | <u>Mid-Channel</u> | <u>South Side</u> |
|--------------------------------|---------------|---------------------------|---------------------------|---------------------------|
| West of the Road Bridge | West Boundary | 56°26.22'N 002°56.79'W | 56°26.78'N 002°58.81'W | 56°27.14'N 002°58.88'W |
| | East Boundary | 56°26.56'N 002°56.46'W | | 56°27.30'N 002°58.26'W |
| East of the Road Bridge | West Boundary | 56°27.17'N 002°54.33'W | | 56°28.09'N 002°54.60'W |
| | East Boundary | 56°27.17'N 002°53.96'W | | 56°28.02'N 002°54.07'W |

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6 PILOT VESSEL OPERATIONS IN RESTRICTED VISIBILITY

Forth Ports and terminal operators have parameters in place, which require ports, docks or terminals to be closed to shipping movements during periods of restricted visibility. However, there will be times when despite ports, docks or terminals being closed to vessel movements Pilot Vessel operations will still be conducted in the river.

Restricted visibility is all circumstances where visibility is, or is expected to, reduce to a distance where the Pilot Vessels' normal ability to perform may be impaired. Such restrictions in visibility could be due to fog, mist, snow, rain, sleet or any other conditions that impair visibility. In circumstances where restricted visibility exists, or is likely to exist, the Pilot Vessel Coxswain shall as part of the passage plan and risk assessment process decide how the operation will be conducted, what dangers are associated with operating the Pilot Vessel in restricted visibility and what risk reduction measures should be applied. When completing this assessment the following points should be considered, along with others as deemed necessary in the circumstances:

Allocation of extra time for the Pilot Vessel operation:

- Conduct of the Pilot Vessel at a safe and appropriate speed.
- Posting of additional lookout(s) onboard the Pilot Vessel.
- Ensuring appropriate setup of navigational equipment on the Pilot Vessel.
- Alteration of passage plan to incorporate increased passing distances.
- Heightened risk when coming alongside a vessel.
- Heightened communication with both VTS and the attended vessel.

The Pilot Vessel Coxswain should inform the Pilot/Master of any concerns that he may have as to the safety of his vessel and the boarding/disembarking operation. If necessary, the Pilot Vessel Coxswain should, in consultation with the Duty Pilot or at night the next pilot on turn, abort the operation in conjunction with the "Suspension of Operations" procedure in the Pilotage Code of Practice. As per this procedure, the situation should be reviewed every hour to assess whether conditions are static, deteriorating or improving.

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7 TOWAGE AND BARGE OPERATIONS

Guidelines for towage operations on the Forth and Tay are detailed on the Forth Ports Website: <https://forthports.co.uk/marine/information/>

When operations involving barges or vessels without propulsion and/or crew are booked; the agent or barge operator should provide a method statement. Port of Dundee requires the approved Barge Proforma to be completed, which can be found on the Forth Ports website or on request from FTNS.

To aid completion of the Barge Proforma please see towage guidelines on the Forth Ports website

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8 VESSELS WITHOUT APPROPRIATE NAVIGATIONAL CHARTS

Vessels are not permitted to enter Port of Dundee CHA limits without being in possession of an up to date edition of Admiralty Chart 1481 or International Chart 1543. In addition, vessels bound for Perth require Admiralty Chart 1479.

Pilots boarding vessels which do not have the appropriate charts should, for inbound vessels, put the vessel to the nearest and most appropriate anchorage and for sailing; vessels must not leave the berth.

Electronic Charts must be approved and have a backup (either a second approved electronic system or paper charts).

Foreign charts are acceptable if they conform to the international numbering system. While Russian charts do not conform to the above standard they are recognized by the Hydrographic Office and are therefore acceptable for use.

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9 USE OF BOATMEN

The procedure for the Port of Dundee requires all vessels; making fast or letting go at all berths in the port to use the services of the licensed boatmen. Forth Ports operates the Licensed Boatmen, they will be arranged by the Port Authority for every vessel booked through FTNS.

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10 TESTING ENGINES BEFORE ARRIVAL OR DEPARTURE

All vessels should test their engines astern before entering any lock system or berthing at port, harbour dock or terminal

Any defects or failure of the engine to go astern should be reported to FTNS and the berthing or docking aborted.

Mariners are advised of the following precautions to be exercised prior to and when testing engines prior to departure.

- Ensure that the gangway is tended and access is prohibited during test or the gangway is removed.
- Cease cargo operations. Tanker manifolds must be disconnected. Shore cranes are boomed clear of the vessel
- No bunkering operations are underway and any hoses are disconnected.
- If necessary inform stevedores
- Test pitch at each console before engaging engines
- Ensure mooring lines are out and fast before engines are tested under load
- Tend mooring lines throughout.
- The proximity of other vessels and in particularly small craft is considered prior to the test.
- Ensure full understanding of the Emergency Stop procedure and be prepared to activate it should any fault be discovered whilst testing.

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APPENDIX A

Vessels are scheduled into / out of ports on the Forth & Tay in accordance with the under keel clearance criteria specified in this section of the Marine Guidelines & Port Information. Vessel operators who require increased under keel clearance margins, over and above those published in the Marine Guidelines & Port Information must ensure that these requirements are specified to FTNS at the time of booking the vessel's arrival / departure. This is to ensure that vessels are booked for the correct height of tide, and to ensure that delays / impacts to the shipping schedule are avoided.

Agents are advised to ascertain vessel specific under keel clear requirements prior to making arrival / departure bookings through FTNS.

Ruling Depths and Under Keel Clearances

The following Ruling Depths apply to the berths, ports and approach channels. The depths indicated are the least depth in the channel or on the berth. Deeper water may be available in certain parts of the channel and conversely shallower water may exist just outside of the channel. The depths given below are an indication of the least depth, which maybe encountered in the channel; however a close examination of the latest soundings should be made when preparing a passage plan.

For areas not included in the tables below an under keel clearance of 10% of the vessels maximum draft with a minimum under keel clearance of 0.5m should be used.

1. Data based on a broad interpretation of current surveys and is only intended as a general guide
2. Original surveys should always be consulted; especially for detailed operational planning
3. All Depths quoted are in metres.

All berths at Dundee are dredged boxes. Generally, the shoals that lie outside these boxes have a depth of 4.5m below chart datum.

Caution: the table below is a general summary only. Original sounding surveys are to be consulted for navigation and passage planning.

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| Location | Available Length | UKC Flood/Ebb | RD | Remarks | Reference Chart (Name and date of last survey) |
|------------------------------------|------------------|---------------|---|--|---|
| River Tay | | | | | |
| The Bar | | 0.5m/0.75m | 6.2m | In vicinity of middle buoys. During periods of E or SE gales swell of 4-5m and more can be experienced at the Bar. During these periods no traffic to cross bar during hours of darkness or on ebb tide OR as per Harbormaster's instructions. | Tay Bar – 27.07.18 |
| Lady Shoal | | 0.5m/0.75m | 5.0m | | Lady Shoal – 23.08.17 |
| Berths | | | | | |
| King George V Wharf | 445m | 0.5m | Bollard 0-52: 5.0m Bollard 52-110: 7.0m Bollard 110-197: 7.5m Bollard 197-416: 8.6m Bollard 416-445: 8.0m | Box 40m width. Height above CD 7.2m | King George V Wharf – 07.03.18 |
| Caledon West Wharf | 76m | 0.5m | 9.0m | Box 305m x 55m Height above CD 7.2m | Caledon West Wharf – 7.03.18 |
| Prince Alexandra Wharf | 256m | 0.5m | Bollard 0-145: 8.0m Bollard 145-181: 7.0m W of Bollard 181: 6.0m | Ships are not to be berthed outside the box. Box Width 35m. Height above CD 7.0m | Prince Alexandra Wharf - 7.03.18 |
| Eastern Wharf | 213m | 0.5m | 7.8m | Box Width 30m. Height above CD 7.0m Depths shoal towards Ro-Ro ramp. No cargo operations | Eastern Wharf - 7.03.18 |
| Prince Charles Wharf and Extension | 312m | 0.5m | 9.0m | Width of box 40m. Height above CD 7.0m. | Prince Charles Wharf – 07.03.18 |

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