

5. Port infrastructure

5.1 Berth information

Berth	Design depth	Height above LAT	Berth pocket	Maximum LOA	Maximum Berthing Displacement	Comments
T1	12.2	5.4m	234	229 ¹	90,000	NGF Berth – Bulk oil, gas, sulphuric acid, bitumen and ship's bunkers.
T2	12.2	6.0m	281	238	90,000	Discharge bulk nickel ore – serviced by one gantry cranes feeding direct to conveyor system.
T3	12.2	6.0m	284	238	90,000	Load - copper, lead, refined nickel, zinc, containers, cattle, bulk products – serviced by 55.9t gantry crane. RO-RO berth.
T4	10.7	6.0m	220	238 ²	70,000	Load bulk molasses @ 400 tph (nominal), bulk cement, vehicles, RO-RO vessels, containers. Serviced by 65t twin lift gantry crane RO-RO ramp height above LAT 5.09m
T8	10.7	5.8m	240	220 ³	70,000	General cargo, scrap metal, fertiliser frozen beef
T9	12.2	5.8m	248	228	90,000	*Bulk sugar rail mounted gantry @ 1800tph (nominal) - bulk molasses and bunkering facility
T10	12.0	5.8m	319	306 ⁴	70,000	Cruise, military, vehicle carriers, General cargo, containers and cattle
T11	12.2	9.4m	240	225	55,000	Outer berth mineral concentrates loading facility – serviced by 1350 tph (nominal) ship loader.

¹ Bow of vessel must be at least 14.5 m east of the Eastern towline of the Platypus channel.

² Berth2, Berth 3 and Berth 4 are aligned providing the ability to berth vessels of LOA up to the maximum LOA for the port currently 306 metres subject to conditions – refer 5.2.3

³ vessels with LOA greater than 200 metres (but less than 220 metres) must discuss with pilots the mooring arrangements to ensure suitable preparation of mooring lines prior to approaching the berth. Use of midship mooring lines if available is recommended

* The sugar ship loader at berth T9 is fitted with a mechanical trimmer, which has a maximum outreach to the centre of the chute of 17.46 metres and a maximum air draft (LAT to horizontal boom) of 17.412 metres.

Note: Design Depths is subject to change. Refer Notices to Mariners for latest depth information

Table 8 – Berth information

5.1.1 Wharf space between ships

A minimum wharf length of 25 metres between ships applies. Safe access to all bollards must be ensured by the wharf operator. Delays will occur if safe access is denied.

5.1.2 Berthing direction

Cyclone season in Queensland is between the start of November and the end of April. During this period ships will berth head out at the Port of Townsville. Any exemptions will only be approved by the RHM. Such an exemption may be given to ships that are rigged to only permit loading and unloading whilst berthed head in.

5.2 Berth restrictions

5.2.1 Tankers at berth 1

All vessels berth starboard side alongside

Maximum LOA – 229

Minimum distance between the bow of a vessel moored at berth 1 and the extension of Eastern toeline of the Platypus channel must be 14.5 metres or greater.

Vessels at this berth may experience a risk of interaction from ships entering or leaving the Inner Harbour Swing basin.

Vessel alongside berth 1 must:

- Cease cargo operations (pumping); and
- Ensure the moorings are tight and tended.

When a ship with draft greater than 9.0m is transiting the entrance of the inner harbour until the ship has passed and it is safe to resume cargo operations.

Mooring requirements:

Vessels with LOA 150 metres or greater must be secured with the following minimum moorings.

Forward - Headlines x 4, breast lines x 2, Forward springs x 2

Stern: Stern lines x 4, breast lines x 2, Aft springs x 2

Unless the ship's mooring plan indicates a higher number of lines.

Vessels with LOA 150metres or less must be secured with the following minimum moorings.

Forward - Headlines x 3, breast lines x 2, Forward springs x 2

Stern: Stern lines x 3, breast lines x 2, Aft springs x 2

Unless the ship's mooring plan indicates a higher number of lines.

5.2.2 Berth T1 and T2

Vessels berthing at Berth T2 must have a minimum clearance during berthing and departures.

If Berth T1 is not occupied the clearance from a vessel at berth T3 must be greater than LOA of vessel going to Berth T2 + 50m (maneuvering margin)

Berth T1 is occupied the clearance from a vessel at berth T3 must be greater than LOA of vessel going to Berth T2 + 90m (50m maneuvering margin + 40 metres for the beam of the Berth 1 vessel).

Masters of ships at berth T1 will be notified by Townsville VTS of impending ship movements. Masters of ships at T1 must:

- ensure the ship moorings are secured and attended.
- ensure that shore connections are secure and attended.
- prohibit the use of gangways or ensure that gangways are secure and attended.
- ensure that a notice prohibiting the approach of other vessels closer than 30 metres is prominently displayed.

5.2.3 Berth T2,T3 and T4

The berth face and berth pockets of Berth T2, BerthT3 and Berth T4 are aligned providing the ability to berth vessels of LOA up to the maximum LOA for the port, currently 306 metres subject to the following conditions.

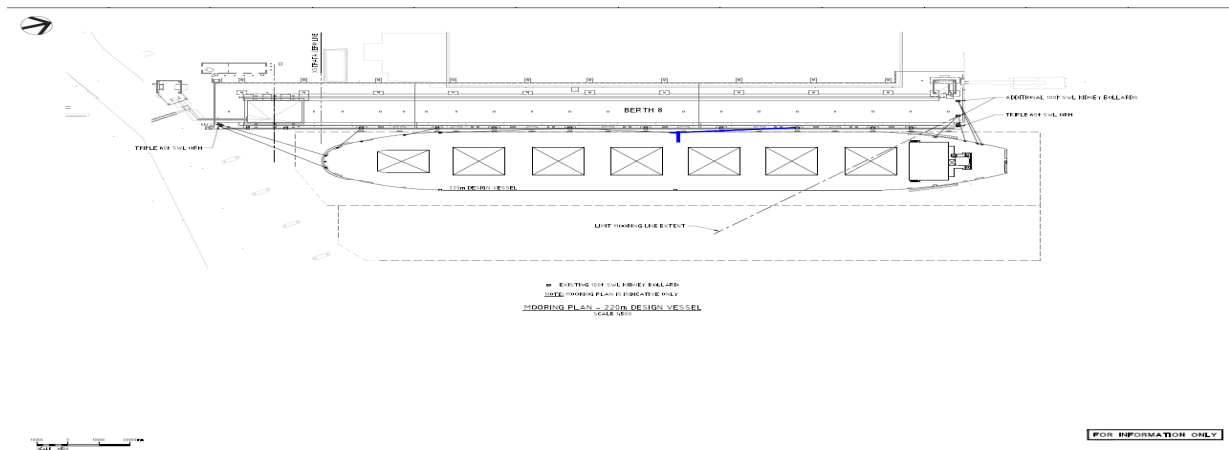
Vessel is alongside 2 berth pockets

- When a vessel straddles 2 berths, the controlling depth is the declared depth of the shallower berth.
- Minimum 25 metres distance between vessels at berth is maintained.

5.2.4 Berth T8

Maximum LOA –220*

* Masters of vessels with LOA greater than 200 metres (but less than 220 metres) must discuss with pilots the mooring arrangements to ensure suitable preparation of mooring lines prior to approaching the berth. Use of midship mooring lines if available is recommended (Refer mooring arrangement diagram)



5.2.5 Berth T9

Vessels with LOA 190 metres and over arriving at berth number 9 to load sugar will generally berth head in to enable loading of all cargo holds.

5.2.6 Berth T10

Berth No.10 berth pocket is 319 metres and is designed to berth vessels up to 306 metres LOA. The decking of the berth extends from the “0” chainage mark to 180m chainage and a breasting dolphin at the 228m chainage mark.

5.2.7 Berth T11

All vessels must swing on arrival and berth port side to:

- maximum overall length is 225 metres
- diameter of swing basin 352 metres
- the maximum wind speed during berthing is 20 knots.
- the maximum wind speed for departure is 25 knots.

- berthing is to be carried out at slack water or on ebb tide.
- departure is permitted at any state of tide.
- minimum UKC refer section 7.7.1.

No departures from inner harbour while another vessel is maneuvering in Townsville Outer Harbour Berth 11 basin. (See Section).

All vessels at berth 11 must be secured with the following **minimum** moorings.

Forward: Headlines x 4, breast lines x 2, Forward springs x 2

Stern: Stern lines x 4, breast lines x 2, Aft springs x 2

Unless the ship's mooring plan indicates a higher number of lines

5.3 Minimum mooring requirements

LOA 150 metres or greater must be secured with the following **minimum** moorings.

Forward : Headlines x 4, breast lines x 2, Forward springs x 2

Stern: Stern lines x 4, breast lines x 2, Aft springs x 2

Unless the ship's mooring plan indicates a higher number of lines.

Vessels with LOA 150metres or less must be secured with the following minimum moorings.

Forward: Headlines x 3, breast lines x 2, Forward springs x 2

Stern: Stern lines x 3, breast lines x 2, Aft springs x 2

Unless the ship's mooring plan indicates a higher number of lines.

5.4 Shore-based cargo handling equipment

Incorrectly positioned cargo handling equipment presents a serious risk to personnel, equipment, and ships arriving to or departing from the berth

At least, one hour prior to the arrival of a ship at the berth or 15 minutes prior to departure.

- Mobile cranes, portainers, bulk loaders, not operating on fixed rails should be stowed a safe distance (at least 10 metres) away from the wharf face; and
- Portainers, gantries and bulk loaders operating on fixed rails along the wharf should be in their designated positions.

Berth 2, 3 and 4 - Continuous wharf line - the designated position is

- at least 40 metres forward of the bow; or
- at least 40 metres astern of the stern; or
- If neither of the above options are possible then midway along the wharf line to be occupied by the ship.

Berth 8 - designated position - storm park position – shore ward of the “0” mark

Berth 9 - designated position

- Midway along the wharf line to be occupied by the ship; or
- Storm park position. If loader is stowed at the ‘storm park’ position, then the shoreward end of the vessel is to be no closer than the 65m mark.

Berth 11 - designated position - midway along the wharf line to be occupied by the ship

5.4.1 Positioning of Crane, gantry, portainer or bulk loader booms.

Cranes, gantries, portainers and bulk loaders should have their loading arms (booms) raised when parked:

- anywhere seaward of the Zero mark; and
- Within the manoeuvring zone (manoeuvring zone means the wharf line to be occupied by the ship + 25 metres Forward & aft of the ship).

Wharf operators should ensure no equipment is protruding beyond the rigid line of the wharf when a vessel is berthing/departing.

Wharf operators are to be aware of these requirements and masters should check that shore gantries do not prevent the positioning of their gangway after arrival at the berth.

5.4.2 Crane, gantry, portainer or bulk loader, breakdown.

Where a crane, gantry, portainer or bulk loader has broken down within the manoeuvring zone of a ship:

- a) Arrivals: Terminal should consider rescheduling the berthing to after the cranes, gantry, portainer or bulk loader has been repaired. If the vessel is already with pilot on board and past the abort point, Pilot should bring the vessel to the swing basin and in consultation with Master consider returning to anchorage. Pilot must not berth the vessel unless completely satisfied it is safe to do so.
- b) Departures: Terminal should make every attempt to park the cranes, gantry, portainer or bulk loader in a location to the satisfaction of the Master and pilot. Pilot must not depart the berth unless completely satisfied it is safe to do so.

5.5 Yacht marinas

The Breakwater Marina

Located has been established adjacent to the harbour entrance with a current capacity of 280 berths for vessels up to 43.0 metres in length. The marina is accessed using the Breakwater Marina channel, marked by the white sector of the of the Breakwater Marina channel sector light (refer section 16.8)

Townsville Yacht Club

Located in the Ross Creek has a capacity for 180 vessels up to 20 metres in length. Access to this marina and Ross creek is through the Port of Townsville swing basin Mariners are advised to comply with the port busy signal and not to transit when the Port busy signal is lit.

Any vessel with LOA greater than 35 metres must notify the RHM (through VTS) to seek permission to proceed transit the Pilotage area.

5.6 Townsville Ross Creek

Ships visiting a berth situated upstream of the front lead in Ross Creek is limited by the width of the channel, swing basin and depth of the Ross Creek channel. The maximum size of ships is:

- Length overall: 50 metres (Self-propelled or Dumb barge/tug combination)
- Extreme Beam: 20.0 metres

- Minimum UKC required: 0.4 metres.

Any vessel with LOA greater than 35 metres must notify the RHM (through VTS) to seek permission to proceed to berth.

5.7 Townsville Marine Precinct.

The Townsville Marine Precinct has been established at the mouth of the Ross River. The precinct has a barge ramp, ship-lift, docking facility and associated marine facilities. There are approximately 50 trawler berths and pile moorings.

The maximum size of ships visiting the Townsville Marine Precinct is limited by the width of the entrance and depth of the Ross River channel. The Precinct limits ship size to

- Length overall: 65 metres (Self-propelled or Dumb barge/Tug)
- Extreme Beam: 20.0 metres
- Minimum UKC required: 0.4 metres

Note: The maintained depth of the river is 2.5 metres, The Ross River channel is affected by siltation and depths may be less between scheduled dredge campaigns. Mariners are reminded to consult the [Notices to Mariners](#) for the latest depth information.

5.8 Anchorage areas

5.8.1 Inner Anchorage

There is good holding ground in Cleveland Bay. There is 1 designated anchorage position within the Compulsory Pilotage Area of Port of Townsville, generally for use of vessels requiring to conduct passenger or personal transfers.

Anchorage Number	Latitude	Longitude	Depth	Diameter	Maximum Draft
1	19° 08.250' S	146° 55.000' E	11 metres	1 Nm	8 metres

Masters of passenger vessels intending to anchor in Cleveland Bay within the compulsory pilotage area of Port of Townsville to carry out passenger transfers at anchor, must submit a request to anchor within the compulsory pilotage area of Cleveland Bay to the Regional Harbour Master by email:

To: RHMTown@msq.qld.gov.au (cc vtstownsville@msq.qld.gov.au)

The following information will be required in the request:

- Estimated arrival and departure times; and
- Draft in metres.

The Regional Harbour Master will assess the request to determine suitability and notify the vessel through VTS and the shipping agent.

5.8.2 Outer Anchorage

Vessels arriving off the Port of Townsville and requiring to anchor will be assigned an anchorage by Vessel Traffic Services.

There are 12 designated anchorage positions outside port limits for use of vessels waiting to berth.

Anchorage Number	Latitude	Longitude	Depth	Diameter	Maximum Draft
2	19° 07.000' S	146° 55.750' E	14 metres	1 Nm	8 metres
3	19° 07.000' S	146° 57.000' E	14 metres	1 Nm	8 metres
4	19° 07.000' S	146° 58.250' E	16 metres	1 Nm	10 metres
5	19° 07.000' S	146° 59.500' E	17 metres	1 Nm	11 metres
6	19° 05.750' S	146° 55.750' E	16 metres	1 Nm	10 metres
7	19° 05.750' S	146° 57.000' E	18 metres	1 Nm	12 metres
8	19° 05.750' S	146° 58.250' E	19 metres	1 Nm	13 metres
9	19° 05.750' S	146° 59.500' E	19 metres	1 Nm	13 metres
10	19° 04.500' S	146° 55.750' E	19 metres	1 Nm	13 metres
11	19° 04.500' S	146° 57.000' E	19 metres	1 Nm	13 metres
12	19° 04.500' S	146° 58.250' E	20 metres	1 Nm	14 metres
13	19° 04.500' S	146° 59.500' E	21 metres	1 Nm	15 metres

5.8.3 Anchoring off Australian ports

AMSA has issued a Marine Notice (3/2014) to remind Masters of the precautions to be taken when anchoring off Australian ports. Masters should apply the basic tenets of good seamanship and common sense when anchoring in off-shore and exposed anchorages.

5.8.4 Anchoring Prohibited

Anchoring of any vessel is prohibited within the waters

- Commencing at the mean high-water mark of the western bank of Ross Creek nearest to location 19° 14.662'S, 146° 49.973'E,
- then north-easterly to beacon P15, at, or about, location 19° 14.578'S, 146° 50.026'E,
- then north-easterly to beacon P1 at, or about, location 19° 11.487'S, 146° 51.970'E,
- then north-easterly to beacon S11 at, or about, location 19° 11.196'S, 146° 52.131'E,
- then north-easterly to beacon S5 at, or about, location 19° 9.342'S, 146° 52.875'E,
- then north-westerly to location 19° 9.230'S, 146° 52.590'E,
- then north-easterly to location 19° 6.310'S, 146° 53.830'E,
- then south-easterly to location 19° 6.680'S, 146° 54.810'E,
- then south-westerly to location 19° 11.770'S, 146° 52.720'E,
- then north-westerly to beacon P2 at, or about, location 19° 11.540'S, 146° 52.086'E,
- then south-westerly to beacon P14 at, or about, location 19° 14.096'S, 146° 50.438'E,
- then to the mean high-water mark of the Port of Townsville Eastport development nearest to location 19° 14.616'S, 146° 50.621'E,

- then south-westerly, and north-westerly along the mean high-water mark to the location on the mean high-water mark nearest to location 19° 14.570'S, 146° 50.130'E,
- then south-westerly, westerly and south-westerly along the mean high-water mark of the Port of Townsville swing basin, and the eastern bank of Ross Creek upstream to a location on the mean high-water mark of Ross Creek, adjacent to the George Roberts Bridge, nearest to location 19° 15.583'S, 146° 49.146'E,
- then northerly across Ross Creek to the mean high-water mark of the western bank of Ross Creek nearest to location 19° 15.534'S, 146° 49.133'E,
- then north-easterly along the mean high-water mark of the western bank of Ross Creek back to the point of commencement.

And

- Nelly Bay harbour and Nelly bay entrance channel, and
- The Breakwater Marina and Breakwater Marina channel, and
- Ross River Channel from the entrance of Ross River channel to upstream limit of the buoyed channel in the vicinity of the Ross River Buoy "RR 22"

Refer Map S3t-3-10

Large vessels transiting the Sea and Platypus Channels are constrained by their draft and are severely restricted in their ability to deviate from their course.

During the passage of large vessels transiting the Sea channel, Platypus Channel or manoeuvring within Port of Townsville Swing basins, smaller ships **must not drift or idle** within Sea channel, Platypus Channel or manoeuvring within Port of Townsville Swing basins.

5.9 Navigation aids

5.9.1 Lighthouses and leading lights in Cleveland Bay

Cape Cleveland – W.R 7.5s, 64m 15/12M

The red sector covers Salamander Reef through an arc of 27° from 259° through 286°. It is located on the extremity of Cape Cleveland.

Leading Lights	Position	Light
Sea Channel Arrival Front Lead (SAFL) Beacon P4	19°11.7252'S 146°51.9671'E	FIR4s + F Bu (FW day)
Sea Channel Arrival Rear Lead (SARL)	19°12.7140'S 146°51.5576'E	FIY2.5s + F Bu (FW day)

Leading Lights	Position	Light
Platypus Channel Departure Front Lead (PDFL) Beacon S12	19°11.1294'S 146°52.2771'S	FI R 4s + F Bu (FW day)
Platypus Channel Departure Rear Lead (PDRL)	19°10.4373'S 146°52.7267'S	FIY2.5s + F Bu (FW day)

Leading Lights	Position	Light
Platypus Channel Arrival Front Lead (PAFL)	19°14.8449'S 146°49.8627'E	QG + F Bu (FW day)
Platypus Channel Arrival Rear Lead (PARL)	19°15.2760'S 146°49.5823'E	F Bu (FW day)

Leading Lights	Position	Light
Platypus Channel South Front Lead (PSFL)	19° 14. 9150'S 146°49. 8490'E	F Bu (FW day) + Iso W 4s Port Busy Light
Platypus Channel Arrival South Rear Lead (PSRL)	19°15.5510'S 146° 49.4380'E	F Bu (FW day) + Iso R 2s

Leading Lights	Position	Light
Berth 10 Front Lead (B10 FL)	19°14.9333'S 146°49.8667'E	F Bu (FW day)
Berth 10 Rear Lead (B10 RL)	19°15.0191'S 146°49.813'E	F Bu (FW day)

Leading Lights	Position	Light
Berth 11 Arrival Front Lead (B11FL)	19°14.7763'S 146°50.3338'E	Q Bu (FW day)
Berth 11 Arrival Rear Lead (B11RL)	19°14.8290'S 146°50.3302'E	Iso 2s Bu (FW day)

Sugar Terminal Lights in line – F Bu

The center of the swing basin between Berth No 9 and No 10 is marked by a set of leads located on the shore. They are in line showing same bearing as the line of the wharves at the finger berths, bearing 199° - 019°.

Outer Harbour Lights in line – FIY2s

The center of the swing basin for this berth is marked by 2 beacons FI Y 2·5s on a bearing of 092°. The 8.5 m contour marking the southern boundary of the dredged basin is marked by 2 buoys FI Y 4s.

Breakwater Marina Channel is indicated by a sector light

Occ G 3 secs 200.6°T to 205.6°T

Occ 3 secs 205.6°T to 206.6°T indicating centre of channel

Occ R 3 secs 206.6°T to 044.6°T the white sector.

The white sector marks the dredged channel

5.9.2 Buoys/beacons

All buoys in the bay are liable to a change of position. The positions given must, therefore, be regarded as approximate only. The majority of buoys have been replaced by beacons. In the

lists of buoys and beacons below, beacons are indicated by the legend 'Bn' buoys are indicated by the legend 'By'. The beacons in the Sea and Platypus Channels with FI 4s lights are radio synchronised.

Navigational Aid	Name	Position	Light
Cardinal mark	North Cardinal Beacon	19° 07.7089'S 146°54.3819'E	Q

5.9.2.1 Sea Channel

Navigational Aid	Name	Position	Light
Port Lateral Mark	Beacon S2	19° 08.4492'S 146°53.3935'E	QR
Starboard Lateral Mark	Beacon S5	19° 09.3419'S 146°52.8750' E	QR
Port Lateral Mark	Beacon S6	19° 09.3874'S 146°52.9999'E	QR
Starboard Lateral Mark	Beacon S7	19° 09.8848'S 146°52.6644'E	FIG4s
Port Lateral Mark	Beacon S8	19° 09.9247'S 146°52.7739'E	FIR4s
Starboard Lateral Mark	Beacon S9	19° 10.4236'S 146°52.4469'E	FIG4s
Port Lateral Mark	Beacon S10	19° 10.4628'S 146°52.5543'E	FIR4s
Starboard Lateral Mark	Beacon S11	19°11.1965' S 146°52.1312'E	FIG4s
Port Lateral Mark Front Lead	Beacon S12 (PDRL)	19°11.1294'S 146°52.2771'S	FIR4s + F Bu (FW day)

Table 9 – Sea Channel

5.9.2.2 Platypus Channel

Navigational Aid	Name	Position	Light
Starboard Lateral Mark	Beacon P1	19°11.4870'S 146°51.9696' E	QG
Port Lateral Mark	Beacon P2	19°11.5401'S 146°52.0858'E	QR
Port Lateral Mark Front Lead	Beacon P4 (SAFL)	19°11.7952'S 146°51.9671'E	FIR4s + FBu (FW day)
Starboard Lateral Mark	Beacon P5	19°12.1766'S 146°51.5186'E	FIG4s
Port Lateral Mark	Beacon P6	19°12.2441'S 146°51.6332'E	FIR4s
Port Lateral Mark	Beacon P8	19°12.7074'S 146°51.3346'E	FIR4s
Starboard Lateral Mark	Beacon P9	19°13.0992'S 146°50.9143'E	QG
Port Lateral Mark	Beacon P10	19°13.1697'S 146°51.0355'E	QR
Starboard Lateral Mark	Beacon P11	19°13.5601'S 146°50.6122'E	FIG4s
Port Lateral Mark	Beacon P12	19°13.6334'S 146°50.7374'E	FIR4s
Starboard Lateral Mark	Beacon P13	19°14.0219'S 146°50.3094'E	FIG4s
Port Lateral Mark	Beacon P14	19°14.0959'S 146°50.4379'E	FIR4s
Starboard Lateral Mark	Beacon P15	19°14.4902'S 146°50.0025'E	QG
Port Lateral Mark	Beacon P16	19°14.5766'S 146°50.1550'E	QR

Navigational Aid	Name	Position	Light
Starboard Lateral Mark	Beacon 17	19°14.6658'S 146°49.9687'E	OcG4s

Table 10 – Platypus Channel

5.9.2.3 Townsville Harbour

Navigational Aid	Type	Characteristic
Swing Basin	Bn	F. Bu lights on northern end of sugar shed are the clearing marks for the swing basin on 198.9°

Table 11 – Townsville Harbour

5.9.2.4 Ross Creek

Navigational Aid	Type	Characteristic
Dredged Toe Line Front Mark	Bn	Q. G (between boat ramps)
Western Bank	Bn	Q. G (upstream of Ferry Terminal)
Hayles Jetty (western side)	Bn	Q. G.
Repair Berth	By	FI R (3) (marks clear water)

Table 12 – Ross Creek

5.9.2.5 Ross River

Navigational Aid	Type	Characteristic
RR 1	By	FI R 2.5s
RR 2	Bn	FI R 2.5s
RR 3	By	FI G 2.5s
RR 4	Bn	FI R 2.5s
RR 5	By	FI G 2.5s
RR 6	Bn	FI R 3s
RR 7	By	FI G 2.5s
Marine Precinct – Starboard Lat.	Bn	FI G 4s
Marine Precinct - North Cardinal	Bn	Q W
RR 9	By	FI G 2.5s
RR 10	Bn	FI R 2.5s
RR 11	Bn	FI G 2.5s
Ross River TPAR Bridge		
RR 12	Bn	FI R 2.5s
RR 13	Bn	FI G 2.5s
RR 14	Bn	FI R 2.5s
RR 15	Bn	FI G 2.5s
RR 16	Bn	FI R 2.5s
RR 17	Bn	FI G 2.5s
RR 18	Bn	FI R 2.5s

Navigational Aid	Type	Characteristic
RR 19	Bn	Fl G 2.5s
RR 20	Bn	Fl R 2.5s
RR 22	Bn	Fl R 2.5s

Table 13 – Ross River

5.9.2.6 Breakwater Marina

Navigational Aid	Type	Characteristic
No 1	Bn	Fl G 2·5s
No 2	Bn	Fl R 2·5s (Western breakwater)
No 3	Bn	Fl G 2·5s (Western Arm)
No 4	Bn	Fl R 2·5s (Eastern Bank)
No 5	Bn	Q Fl R (Western Arm)
No 6	Bn	Q Fl G (Eastern Bank)

Table 14 – Breakwater Marina