APPENDIX 1 – Newcastle Port Passage Planning Standard Routes Description and Waypoint Construction

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Inward via PBG “Charlie” to M7 Berth

V0119

This route is designed for tankers boarded at PBG C bound for Mayfield 7 berth. The route commences at PBG B then heads North toward PBG C. As the 265° Leads come into transit, a 1nm radius turn to port commences, ending in the wedge between the 236° and 245° Leads. From there it is a standard channel track around the Horseshoe Bend and Steelworks Channel until Buoy 15 where a gentle turn to port takes the track onto the NCIG Leads.

WP	Latitude	Longitude	Turn Radius	Cross Track	Speed	Bearing	Distance
1	32°58.87800S	151°52.68900E	0.30nm				
				450m	10kt	000°	2.83nm
2	32° 56.00000S	151° 52.70000E	1.00nm				
				300m	8kt	301°	3.25nm
3	32° 54.28655S	151°49.25836E	1.00nm				
				50m	7kt	241°	1.29nm
4	32°54.93916S	151°47.85452E	0.30nm				
				25m	4kt	238°	0.54nm
5	32°55.21453S	151°47.33488E	0.30nm				
				75m	4kt	238°	0.41nm
6	32°55.52290S	151°46.75107E	0.42nm				
				60m	4kt	337°	0.54nm
7	32°54.89055S	151°46.43794E	0.60nm				
				50m	4kt	347°	0.29nm
8	32°54.60338S	151°46.36123E	0.40nm				
				45m	4kt	355°	0.96nm
9	32°53.63068S	151°46.26029E	0.60nm				
				45m	3.5kt	307°	0.35nm
10	32°53.40669S	151°45.90978E	0.60nm				
				30m	3kt	304°	0.28nm
11	32°53.24999S	151°45.63274E	0.30nm				

Figure 1 Inward Via PBG "Charlie" to M7

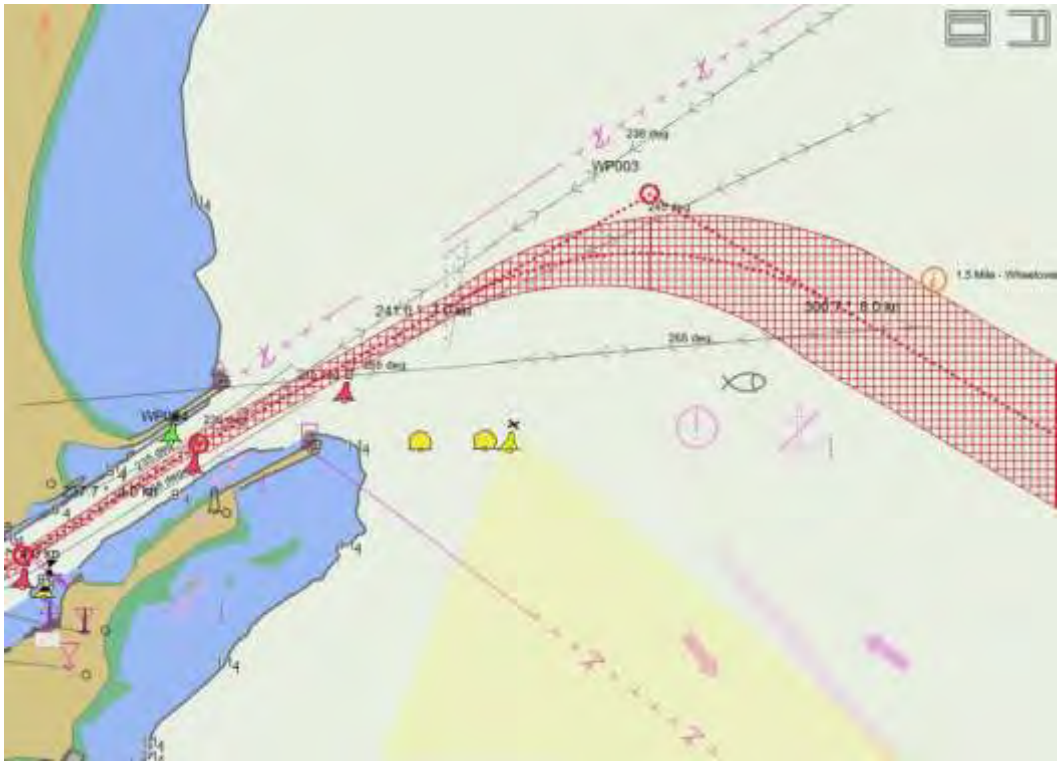

Figure 2 Inward via PBG "Charlie" to M7

Figure 3 Inward via PBG "Charlie" to M7

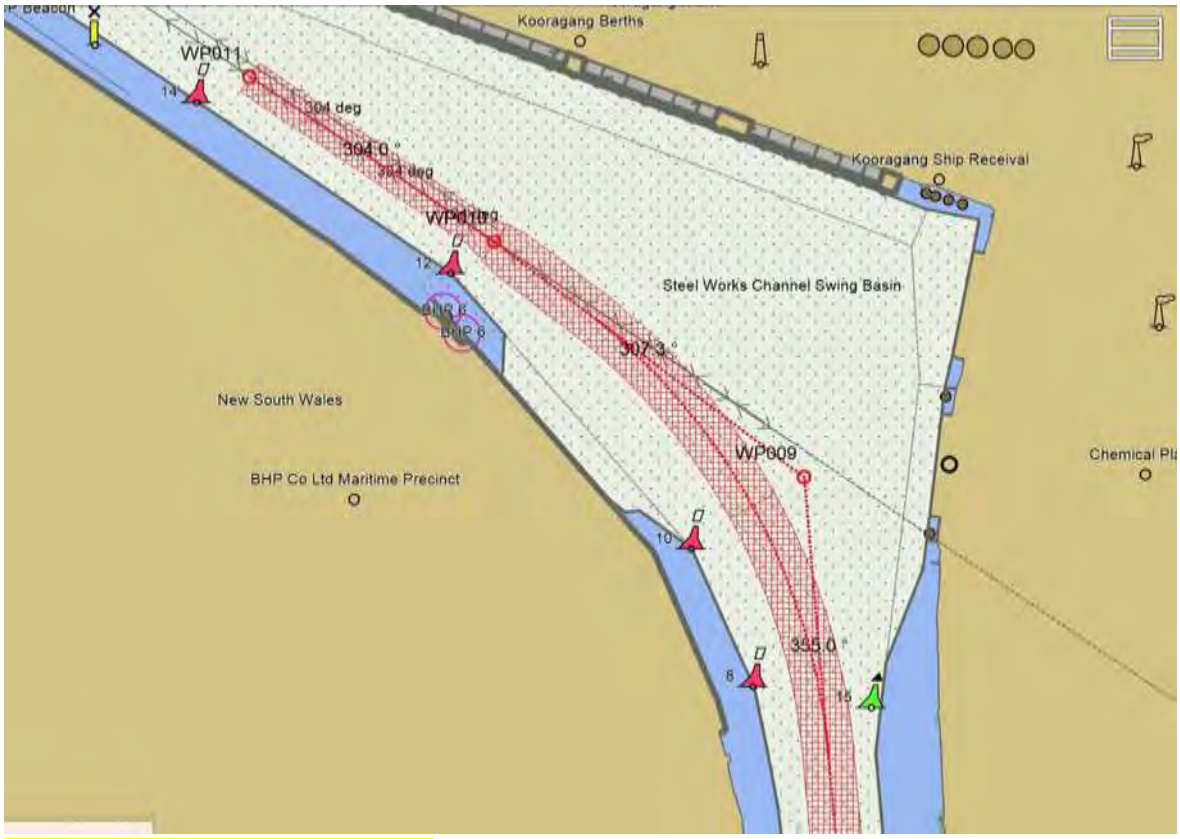

Figure 4 Inward via PBG "Charlie" to M7

Inward via PBG “Alpha” to B15

V0318

This route is designed as a general purpose entry track for all vessels boarded at PBG A and B, bound for all Kooragang berths, M4 and B6 berths.

The route commences at PBG B and heads toward PBG A. From there a course of 351°(T) takes vessels to the north of the voluntary Traffic Separation line. Once 5 cables north of the separation line a course of 320°(T) parallels the Traffic Separation line. After passing through the transit of the Grain Silo and Nobby’s Light, a slow turn to port takes the vessel onto the 236° Leads in the vicinity of the Entrance Buoy. From there it is a standard entry track through the Horseshoe Bend and Steelworks Channel with a slight port turn around Buoy 15.

WP	Latitude	Longitude	Turn Radius	Cross Track	Speed	Bearing	Distance
1	32°58.87800S	151°52.68900E	0.20nm				
				300m	10kt	313°	1.5nm
2	32°57.85164S	151°51.38228E	0.60nm				
				250m	10kt	351°	1.86nm
3	32°56.01015S	151°51.04241E	0.60nm				
				210m	10kt	320°	1.68nm
4	32°54.71955S	151°49.75321E	0.60nm				
				140m	9.5kt	284°	0.96nm
5	32°54.49641S	151°48.64397E	1.30nm				
				60m	9kt	236°	0.80nm
6	32°54.93916S	151°47.85452E	0.30nm				
				45m	8.5kt	238°	0.52nm
7	32°55.21453S	151°47.33488E	0.30nm				
				75m	7kt	238°	0.58nm
8	32°55.52290S	151°46.75107E	0.42nm				
				60m	6kt	337°	0.68nm
9	32°54.89055S	151°46.43794E	0.60nm				
				50m	5kt	347°	0.29nm
10	32°54.60338S	151°46.36123E	0.40nm				
				45m	4.5kt	355°	0.79nm
11	32°53.82070S	151°46.27687E	0.30nm				
				70m	3.5kt	335°	0.21nm
12	32°53.63452S	151°46.17442E	0.60nm				

Figure 5 Inward via PBG "Alpha" to B15

Figure 6 Inward for PBG "Alpha" to B15

Figure 7 Inward via PBG "Alpha" to B15

Outward from Buoy 15 Southern Departure

V0218

This route is designed for all vessels departing from the south and east of K6. The route commences just north of Buoy 15, transits the Steelworks Channel and Horseshoe, and follows the channel out to the helicopter operating zone.

WP	Latitude	Longitude	Turn Radius	Cross Track	Speed	Bearing	Distance
1	32°53.59870 S	151°46.25050 E	0.30nm				
				40m	4kt	175°	1.15nm
2	32°54.73967 S	151°46.37621 E	0.27nm				
				40m	4kt	161°	0.37nm
3	32° 55.08972S	151 46.52210E	0.30nm				
				55m	4kt	135°	0.46nm
4	32° 55.45307S	151° 46.92437E	0.40nm				
				50m	4kt	061°	0.53nm
5	32 55.11394S	151° 47.52234E	0.30nm				
				45m	5kt	056°	0.41nm
6	32°54.92708 S	151°47.87039 E	0.30nm				
				65m	6kt	061°	0.88nm
7	32°54.49488 S	151°48.78050 E	0.50nm				
				150m	7kt	155°	1.22nm
8	32°55.59855 S	151°49.39875 E	0.30nm				

Figure 8 Outward from Buoy 15 Southern Departure

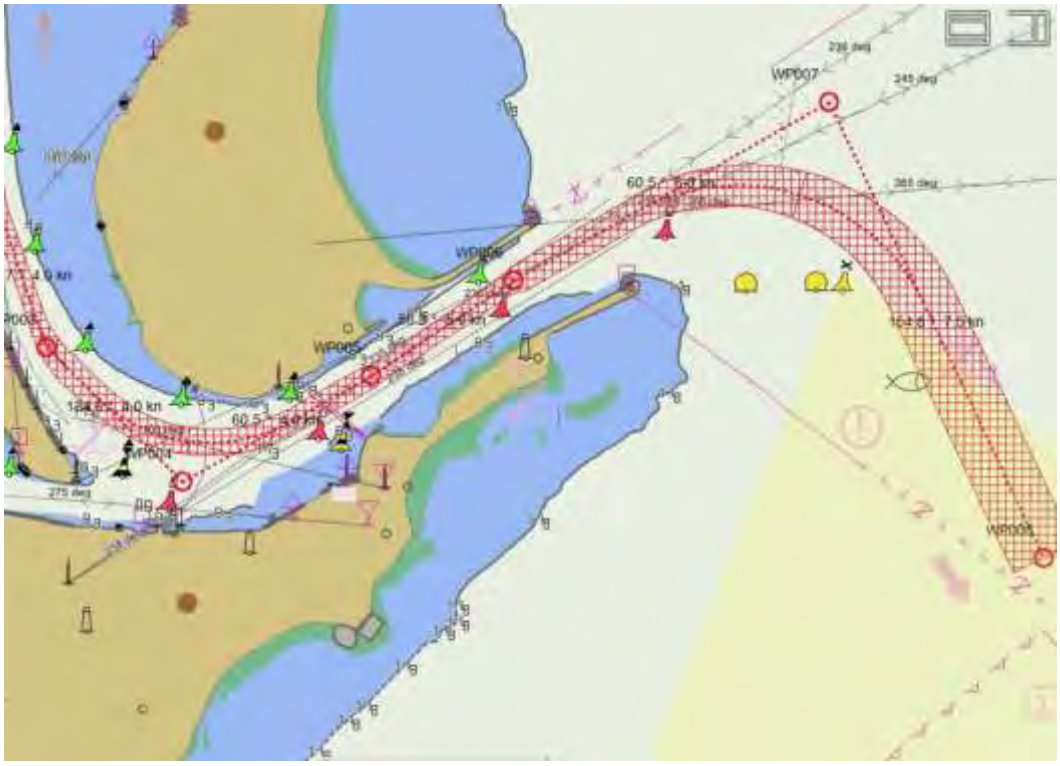

Figure 9 Outward from Buoy 15 Southern Departure

Outward from NCIG Southern Departure

V0118

This route is designed for all vessels departing from K10 to K6. The route commences on the NCIG Leads off K9/K10. Staying on the leads until K8/K7 it takes a slight port turn onto 119°(T) toward the silo at K3. At Buoy 12 the starboard turn commences into the Steelworks Channel. From there it simply follows the standard outward track to the helicopter operating zone.

WP	Latitude	Longitude	Turn Radius	Cross Track	Speed	Bearing	Distance
1	32°52.96316S	151°45.12745E	0.30nm				
				50m	3kt	124°	0.38nm
2	32°53.17771S	151°45.50536E	0.60nm				
				50m	3.5kt	119°	0.68nm
3	32°53.51498S	151°46.21460E	0.40nm				
				50m	3.5kt	171°	0.33nm
4	32° 53.84587S	151° 46.27634E	0.40nm				
				40m	4kt	175°	0.90nm
5	32° 54.73967S	151° 46.37621E	0.27nm				
				40m	4kt	161°	0.37nm
6	32° 55.08972S	151 46.52210E	0.30nm				
				55m	4kt	135°	0.46nm
7	32° 55.45307S	151° 46.92437E	0.40nm				
				50m	4kt	061°	0.53nm
8	32 55.11394S	151° 47.52234E	0.30nm				
				45m	5kt	056°	0.41nm
9	32° 54.92708S	151° 47.87039E	0.30nm				
				65m	6kt	061°	0.88nm
10	32° 54.49488S	151° 48.78050E	0.50nm				
				150m	7.5kt	155°	1.22nm
11	32° 55.59855S	151° 49.39875E	0.30nm				

Figure 10 Outward from NCIG Southern Departure

Figure 11 Outward from NCIG Southern Departure

Figure 12 Outward from NCIG Southern Departure

Outward from Basin Southern Departure

V0817

This route is designed for all vessel departing the Basin. It assumes a helicopter disembarkation and as such takes vessels toward Delta within the helicopter operating zone.

The route commences at the beginning of the Basin Cut, onto the Cut leads and into the Horseshoe. From there onto the 236 Leads and outbound to Delta.

WP	Latitude	Longitude	Turn Radius	Cross Track	Speed	Bearing	Distance
1	32°55.42351S	151°46.38314E	0.30nm				
				30m	3kt	105°	0.21nm
2	32°55.47618S	151°46.62647E	0.40nm				
				45m	5kt	071°	0.46nm
3	32°55.32796S	151°47.14608E	0.60nm				
				45m	7kt	057°	0.73nm
4	32°54.92708S	151°47.87039E	0.30nm				
				65m	8kt	061°	0.88nm
5	32°54.49488S	151°48.78050E	0.50nm				
				150m	9kt	155°	1.22nm
6	32°55.59855S	151°49.39875E	0.30nm				

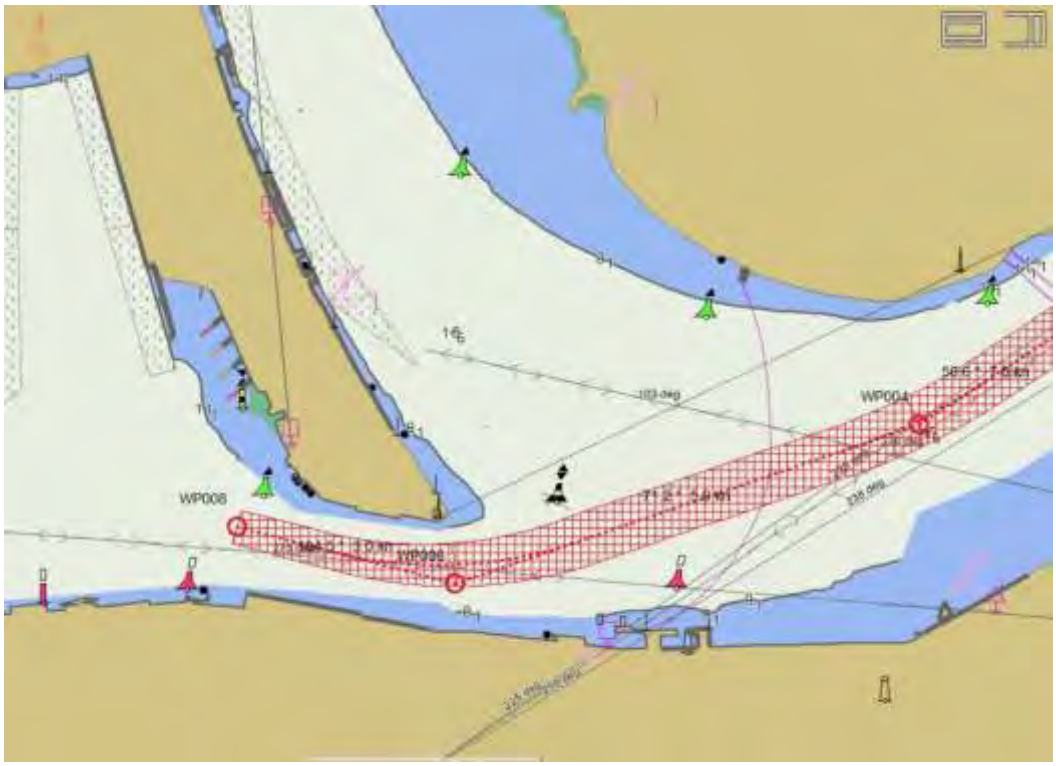

Figure 13 Outward from Basin Southern Departure

Figure 14 Outward from Basin Departure

Inward via PBG ‘Alpha” to Horseshoe

V0318

This route is designed for vessels swinging in the Horseshoe and backing up to the Channel and Dyke berths. It uses the same PBG B and A track as the Inward GP route. It terminates 1cable NE of Birubi Buoy where the maneuvering segment of the pilotage commences.

WP	Latitude	Longitude	Turn Radius	Cross Track	Speed	Bearing	Distance
1	32°58.87800S	151°52.68900E	0.20nm				
				300m	10kt	313°	1.5nm
2	32°57.85164S	151°51.38228E	0.60nm				
				250m	10kt	351°	1.86nm
3	32°56.01015S	151°51.04241E	0.60nm				
				210m	10kt	320°	1.68nm
4	32°54.71955S	151°49.75321E	0.60nm				
				140m	9.5kt	284°	0.96nm
5	32°54.49641S	151°48.64397E	1.30nm				
				60m	9.0kt	236°	0.80nm
6	32°54.93916S	151°47.85452E	0.30nm				
				45m	6.5kt	238°	0.52nm
7	32°55.27347S	151°47.22705E	0.60nm				
				55m	3.5kt	238°	0.58nm
8	32°55.32559S	151°46.82430E	0.30nm				

Figure 15 Inward via PBG "Alpha" to Horseshoe