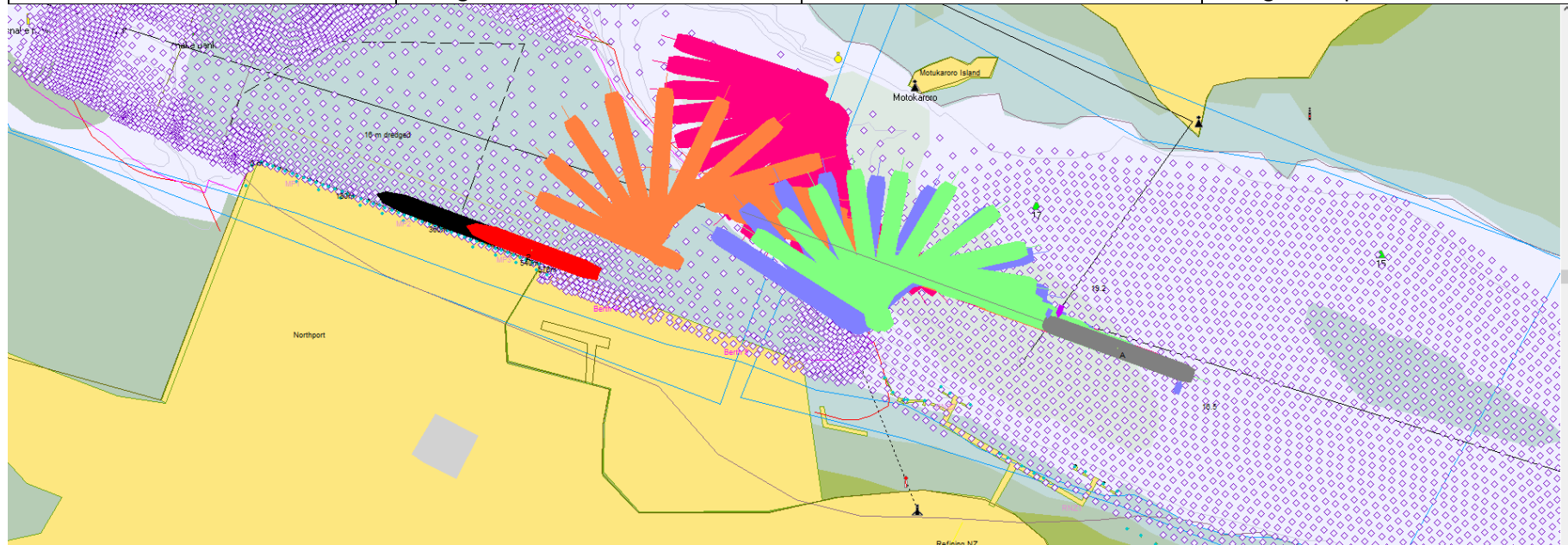


Turning Basin for Berths 4 and 5 Ship 294m Containership 14m draft

Tugs 1 x 70t 1 x50t 1 x28t BB aft. Taka and MB forward. BT not working

Wind SW 20 kts

Run001	Swing to Port	Tide HW -1 hr	Swing in deeper water
Run002	Swing to Port	Tide HW - 2hr	Swing in deeper water
Run003	Swing to Port	Tide HW -2 hr	Swing in shallow water 16m
Run004	Swing to Stbd	Tide HW -2hr	Swing in deeper water



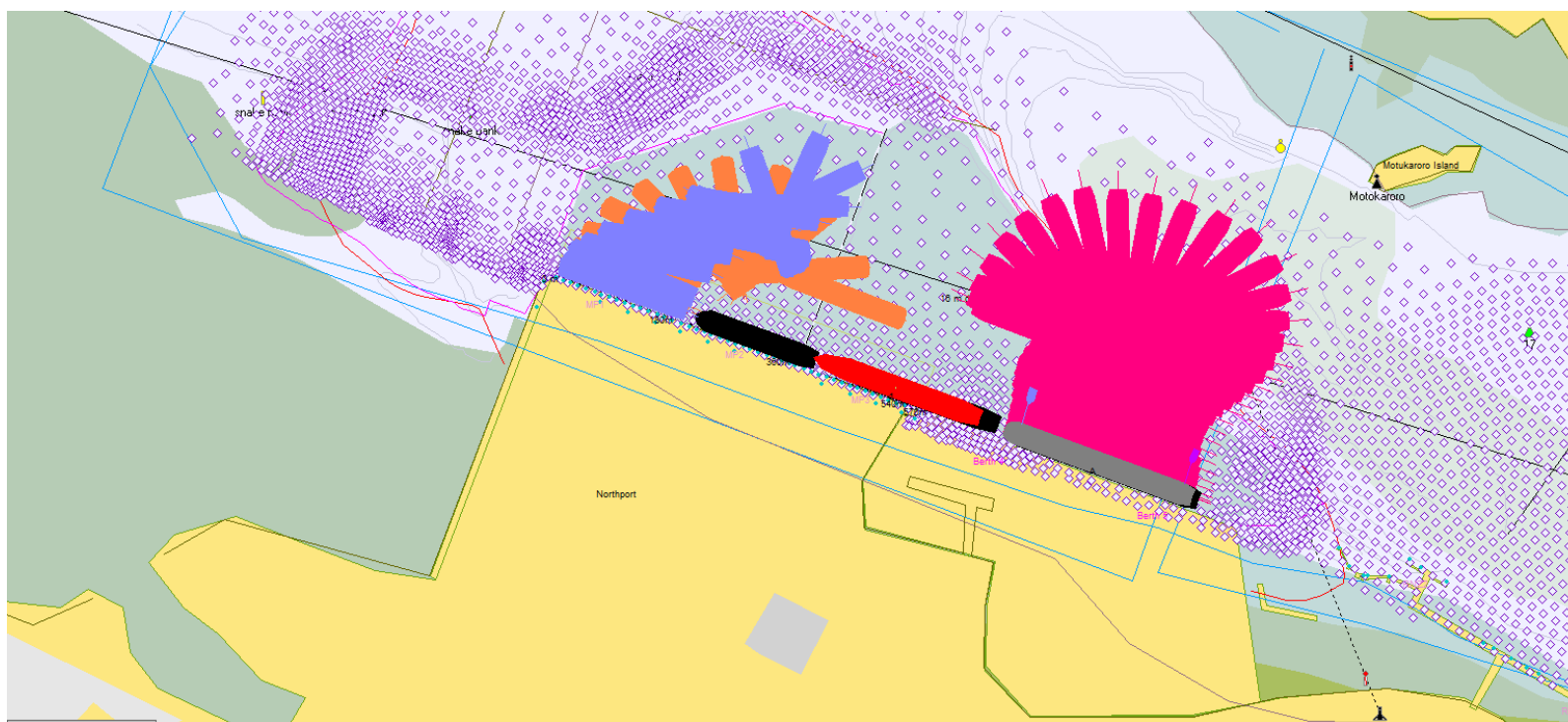
Conclusions

1. Swing to port in deeper water quite feasible and relatively safe even with significant flood tide. Green is HW-1hr
2. Swing to port in shallow water within the basin is slower and ship is using most of the basin. Some conflict with a ship on MP3
3. Swing to stbd in deep water with a strong flood tide is quite dangerous.

Departure Scenario: 1 Containership 294m from MP 45. Draft 14m. Departure Scenario: 2 Car Carrier 199m Draft 10m from MP1

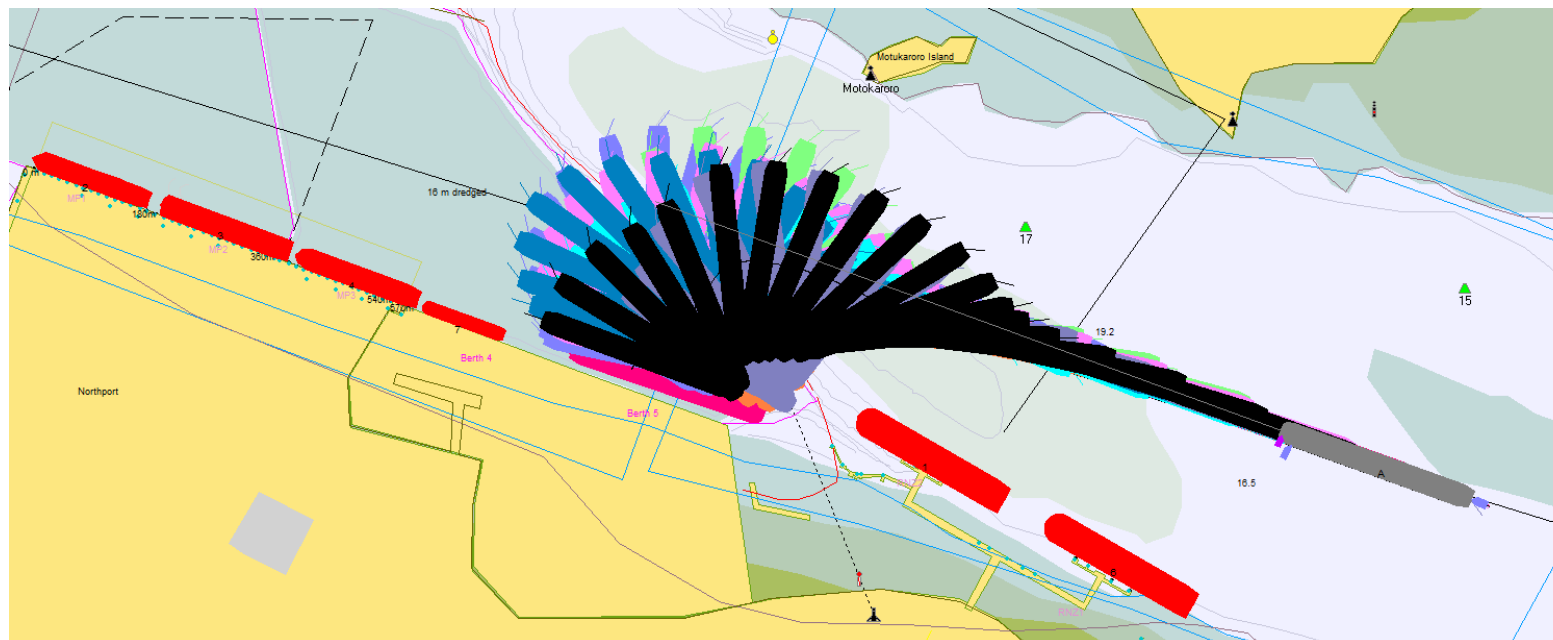
Tugs 1 x 70t 1 x50t 1 x28t BB aft. Taka and MB forward. BT not working. Car Carrier only used BB and Taka BT not working

Wind SW 20 knots. Run 007 Wind N 20knots



Run005	Swing to Port	Tide HW -2 hr	Swing in deeper water
Run006	Swing to Port	Tide HW - 3hr	Swing in deeper water
Run007	Swing to Starboard	Tide HW 3 hr	Swing in shallow water 16m

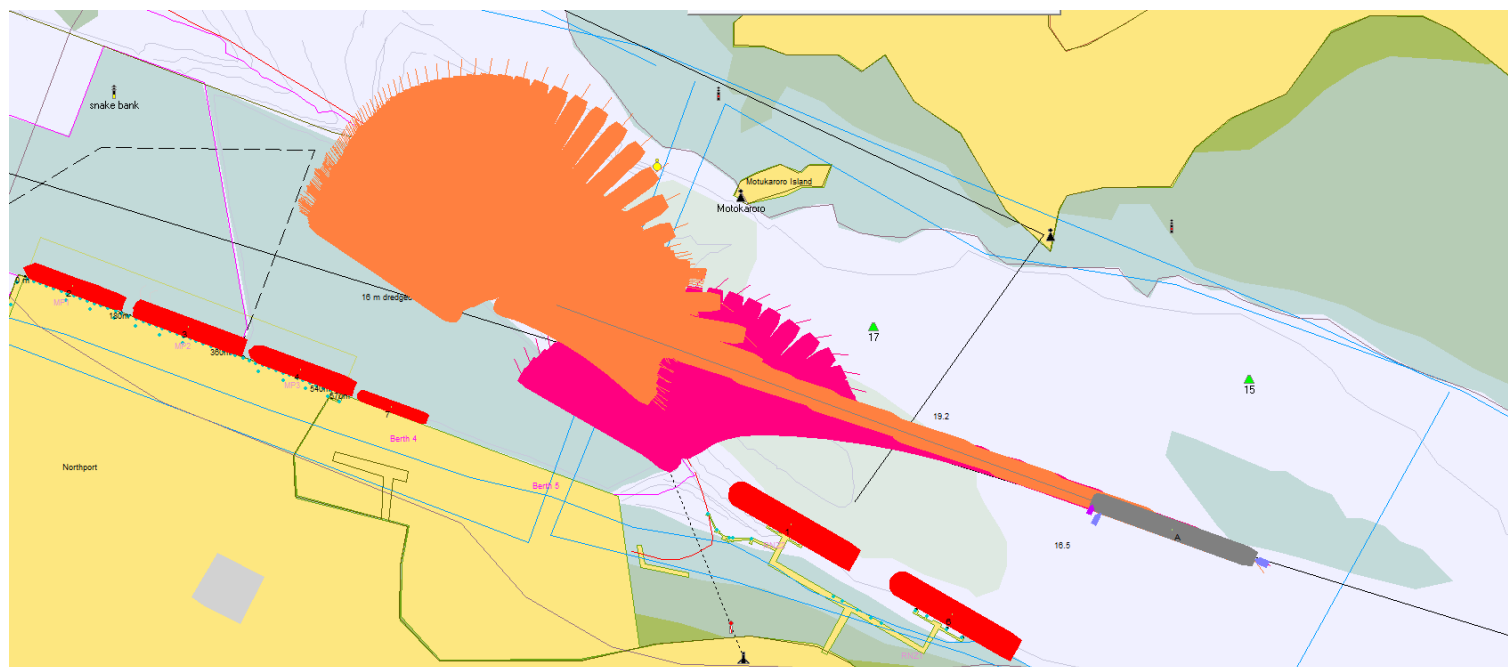
1. Departure swing of 294m loaded ship was quite feasible.
2. Car Carrier departing MP1 in full flood or full ebb was tight but feasible. Used most of the Basin.



294m Containership 14m Draft Arrivals 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available

Run008	NW 20k	Tide HW -0.5 hr	BB and Taka 70% Slight overswing
Run009	NW 20K	Tide HW -0.6hr	BB and Taka 70% Slight good
Run010	W 20k	Tide HW -0.5 hr	BB and Taka 70% Slight overswing
Run011	SW 20k	Tide HW -0.5 hr	BB and Taka 80%
Run012	SW 20k	Tide HW -0.5 hr	BB and Taka 70% Better control
Run013	N 20k	Tide HW -0.5 hr	BB and Taka 70%
Run014	NE 20k	Tide HW -0.5 hr	BB and Taka 70% Slow turn Concern for ship berth 4
Run015	NE 20k	Tide HW -0.5 hr	BB and Taka 80% BT Used Better control
Run016	SE 20k	Tide HW -0.2 hr	BB and Taka 70% BT Used

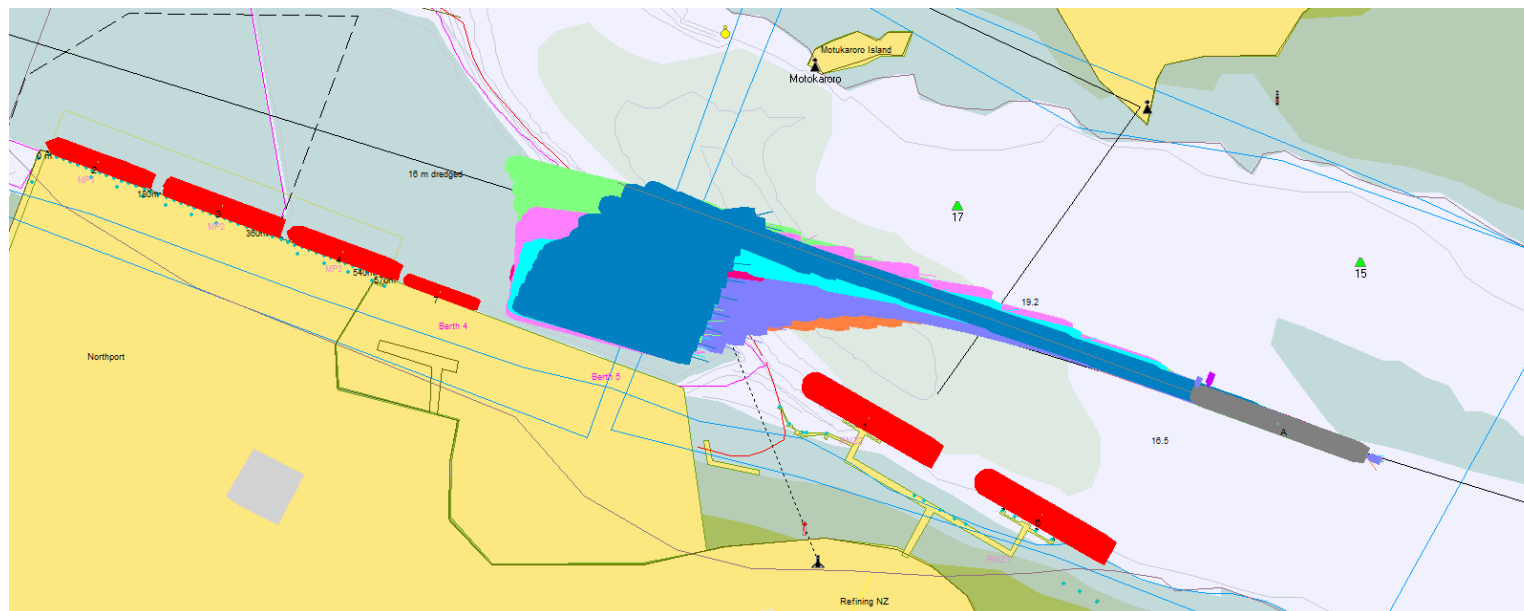
Conclusion: Swing to port on flood arrival is feasible on last of flood tide. Some concern if ship on berth 4.



294m Containership 14m Draft Arrivals 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available

Run017	E 20k	Tide HW -	Used all tugs plus BT 80%
Run018 E	W 20K	Tide HW -0.5hr	Serious Loss of BB. Decided to Anchor 16 hr cycle 2 tugs in attendance + BT

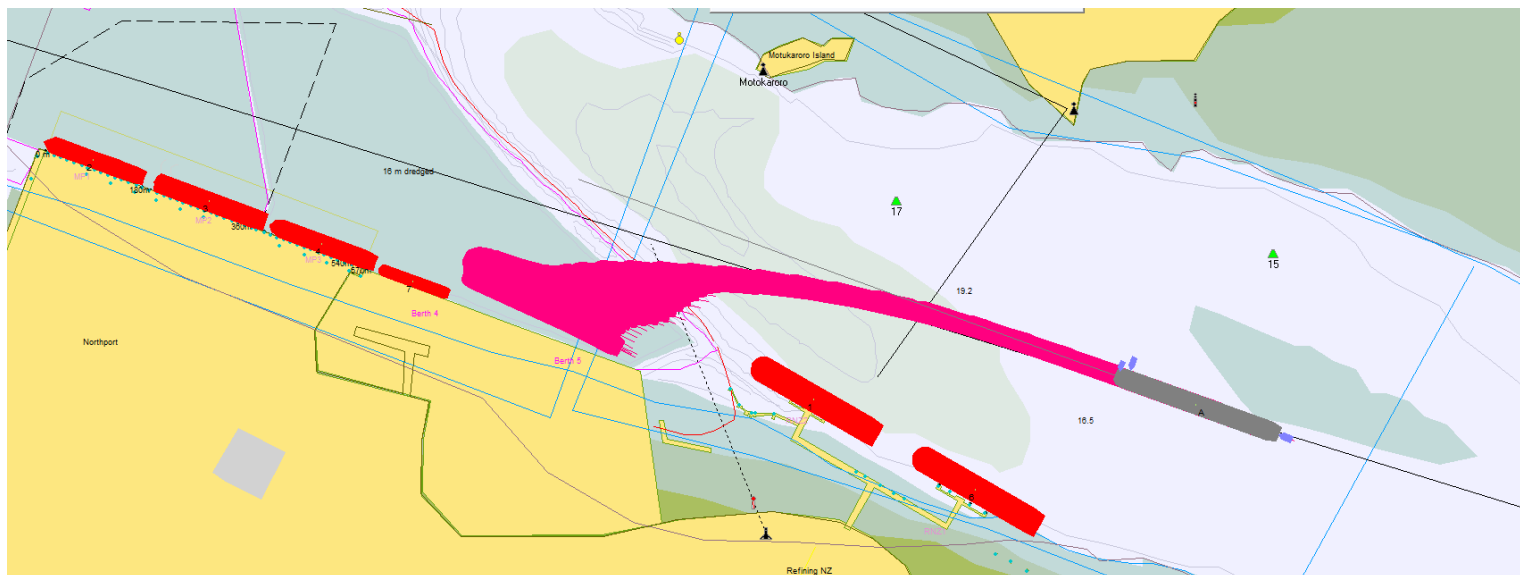
Conclusion: Managed to anchor ship with remaining tugs to assist as the tide turned from flood to ebb and then back to flood. Feasible but position of anchor critical as is the scope. Dependent on the forecast winds as well. Wind speeds above 20 knots will be very difficult.



294m Containership 14m Draft Arrivals 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available No swing

Run019	E 20k	Tide HW -0.5 hr	BB and Taka 70% Slow astern
Run020	NE 20K	Tide HW -0.6hr	BB and Taka 70% Slow astern
Run021	N20k	Tide HW -0.5 hr	BB and Taka 50% DSlow astern
Run022	NW 20k	Tide HW -0.5 hr	BB and Taka 50% DSlow astern
Run023	W 20k	Tide HW -0.5 hr	BB and Taka 70% DSlow astern
Run024	SW 20k	Tide HW -0.5 hr	BB and Taka 70% DSlow astern
Run025	S 20k	Tide HW -0.5 hr	BB and Taka 70% DSlow astern
Run026	SE 20k	Tide HW -0.5 hr	BB and Taka 70% DSlow astern

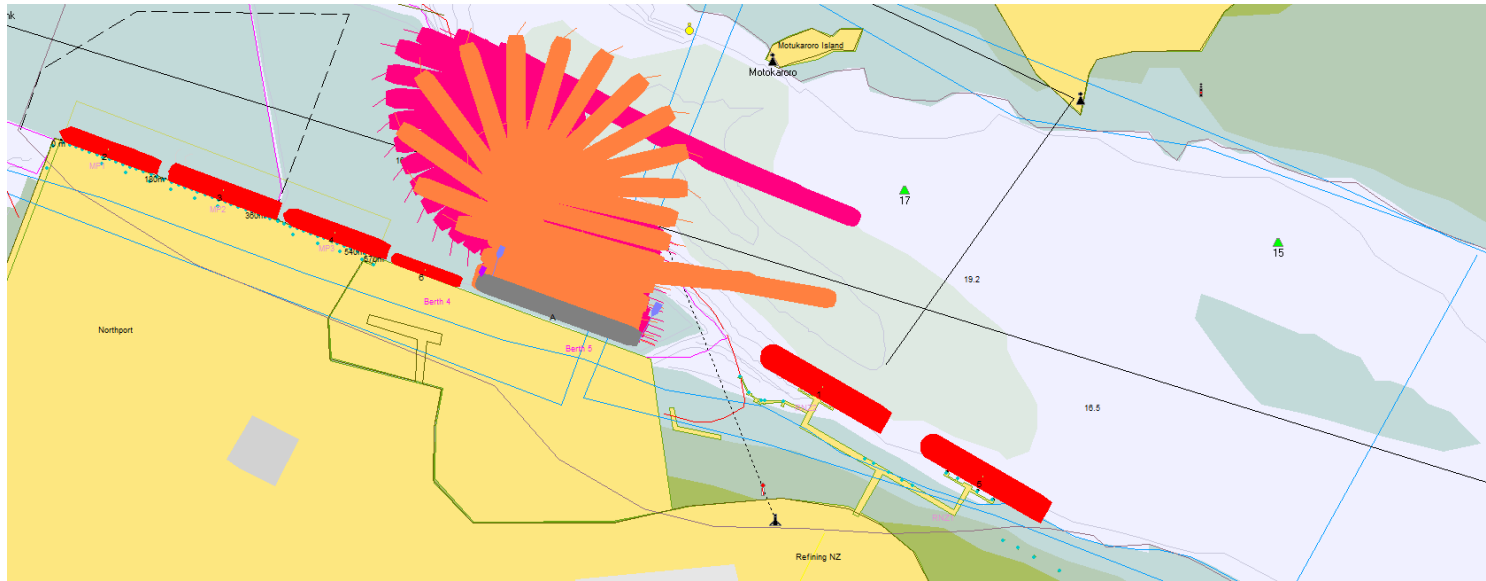
Conclusion: Presented no real difficulties.



294m Containership 14m Draft Arrivals 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available No swing

Run027E	NW 20k	Tide HW -0.5 hr	Loss of BB after 5 mins. Position Taka aft. Use MB and BT return to berth
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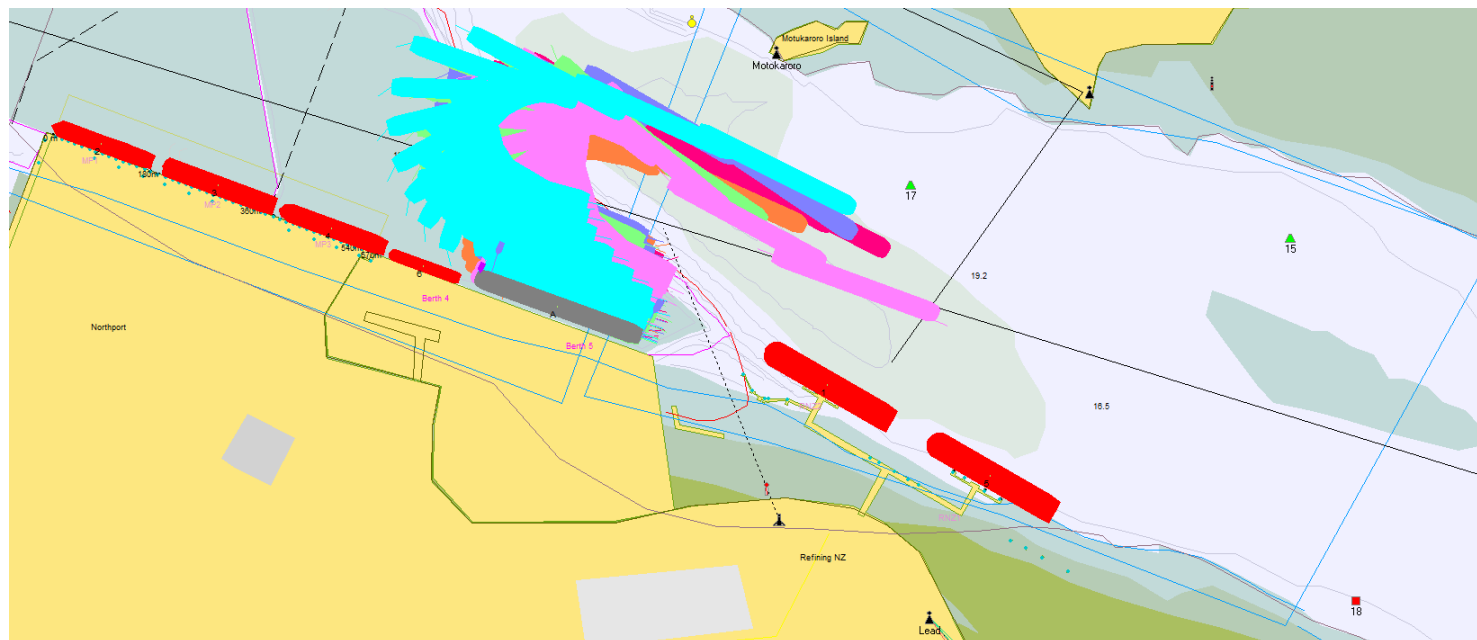
Conclusion: Controlled ok



294m Containership 11m Draft Departures 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available

Run028	SW 20k	Tide HW	Swing to stbd. Well to North as some flood still running. Speed 7 knots. Tugs 80% + BT
Run029	SW 20k	Tide HW	Swing to Port. Exited basin south of leads. Speed 6 knots. Using most of basin. Tugs 80%

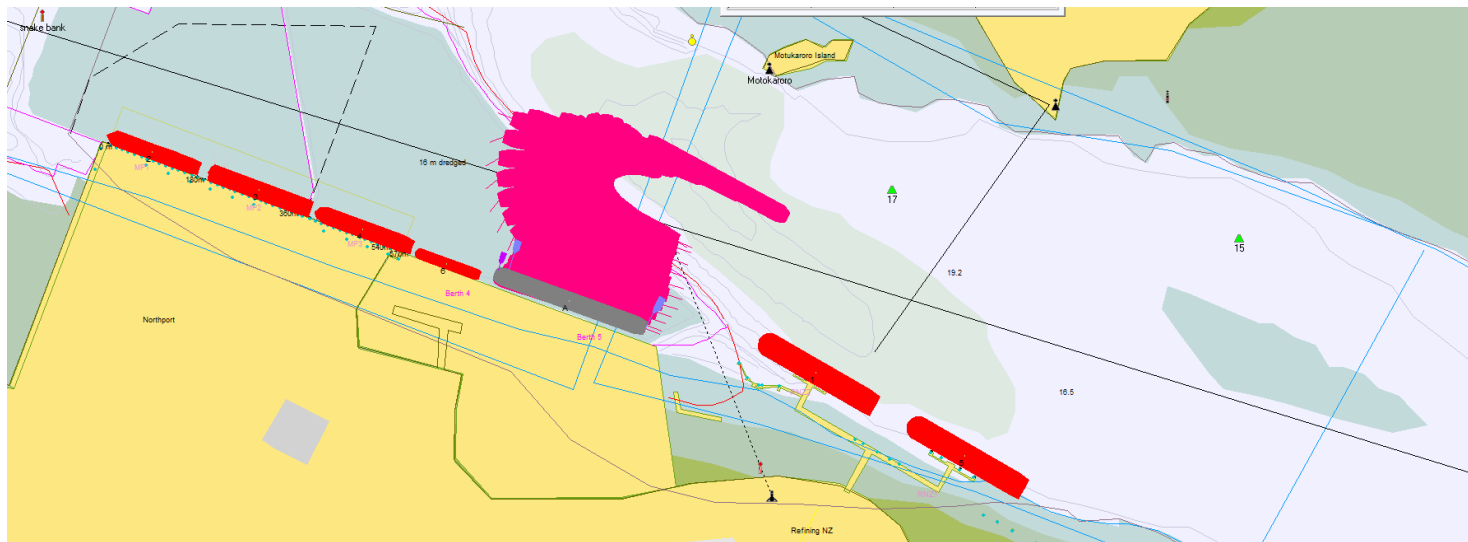
Conclusion: At HW some flood tide is still running so swing to stbd will use a lot of the basin. Port swing also uses a lot of the basin.



294m Containership 11m Draft Departures 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available

Run030	SW 20k	Tide HW +0.5 hr	BB and Taka 80% + BT
Run031	NW 20K	Tide HW +0.5hr	BB and Taka 80% + BT
Run032	N20k	Tide HW +0.5 hr	BB and Taka 80% + BT
Run033	NE 20k	Tide HW +0.5hr	BB and Taka 80% + BT
Run034E	E 20 -35K	Tide HW +0.5 hr	BB and Taka and MB 95% + BT. Thunderstorm or clearing port pre cyclone (Lt Blue)
Run035	SE 20k	Tide HW +0.5 hr	BB and Taka 80% + BT Tight on berth 4

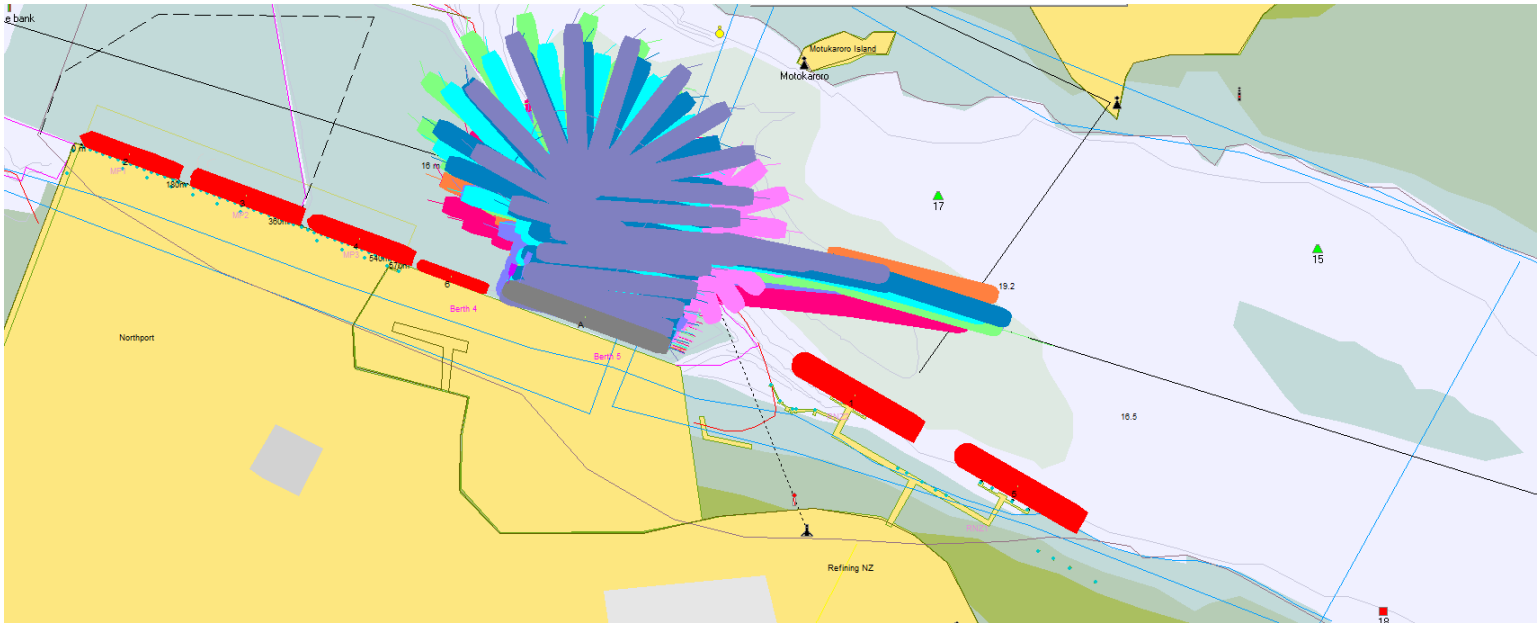
Conclusion: Swing to starboard on the start of the ebb tide is feasible.



294m Containership 11m Draft Departures 3 Tugs RT (85T aft) BB (70T Fwd) MB (28T Fwd) BT available

Run036	SW 20k	Tide HW +0.5 hr	Large Tug Aft BB forrard. Swung relatively quicker.
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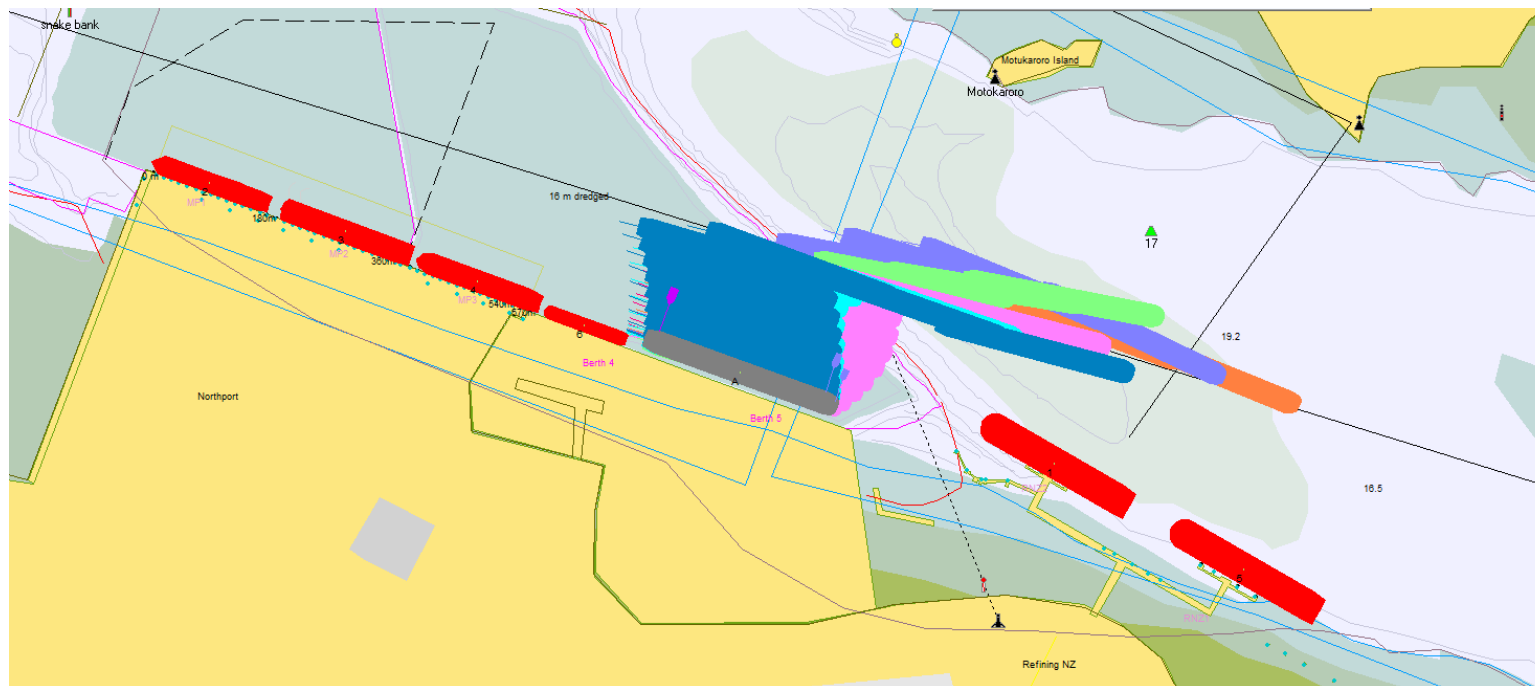
Conclusion: Investigations into stronger bollard pull tugs to be undertaken. It will save time on the departure or arrival swings.



294m Containership 11m Draft Departures 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available

Run037	SW 20k	Tide HW -0.5 hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min
Run038	W 20K	Tide HW -0.5hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min
Run039	NW20k	Tide HW -0.5 hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min
Run040	N 20k	Tide HW -0.5hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min
Run041	NE 20	Tide HW -0.5 hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min Potential to use more of Basin
Run042	E 20k	Tide HW -0.5 hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min Potential to use more of Basin
Run043	SE 20k	Tide HW -0.5 hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min Potential to use more of Basin
Run044	S 20k	Tide HW -0.5 hr	All tugs 90% for 8 to 9 mins + BT ROT up to 30deg/min

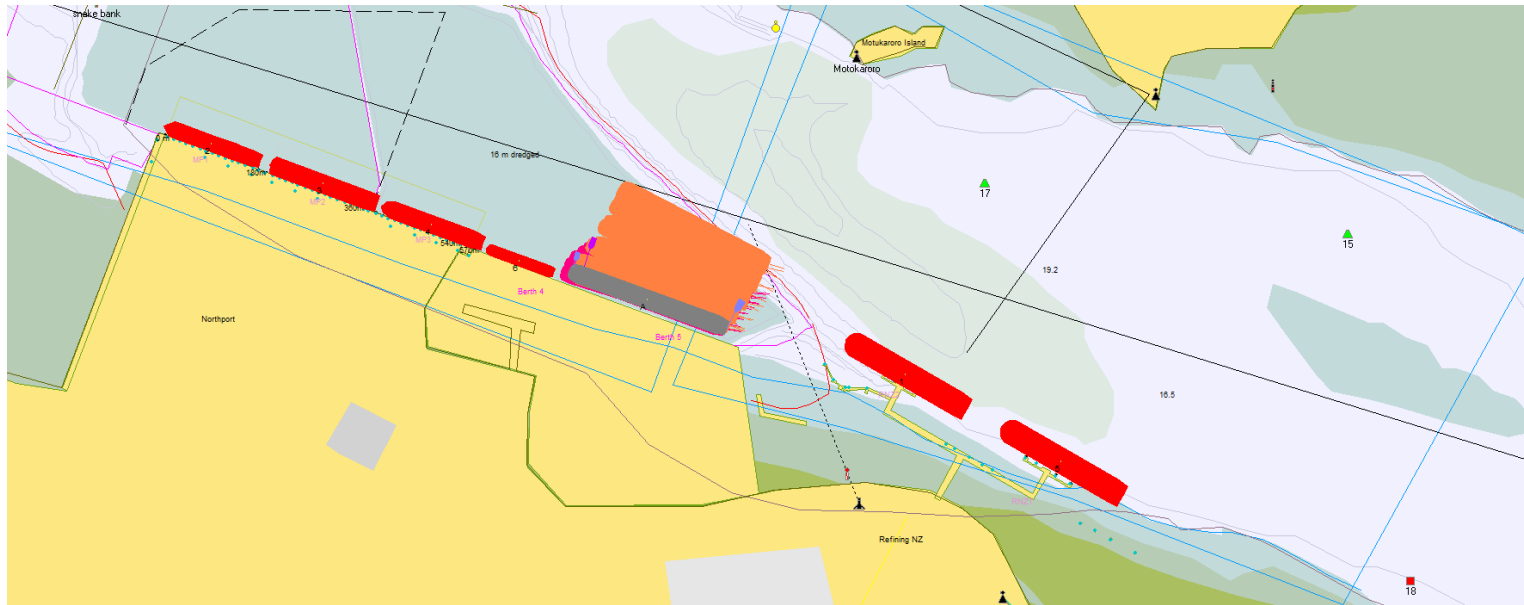
Conclusion: Swing to port on end of flood tide. This is done now but with wind speeds less (15 knots) Winds from the east potentially will have the ship using more of the basin. Stronger bollard pull tug forward will assist here particularly if departing ship is deeper.



294m Containership 11m Draft Departures 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available. No swing

Run045	S 20k	Tide HW -0.5 hr	Tugs 90% No BT
Run046	SW 20K	Tide HW -0.5hr	Tugs 90% No BT
Run047	W20k	Tide HW -0.5 hr	Tugs 60% No BT No MB
Run048	NW 20k	Tide HW -0.5hr	Tugs 60% No BT No MB
Run049	N 20	Tide HW -0.5 hr	Tugs 60% No BT No MB
Run050	NE 20k	Tide HW -0.5 hr	Tugs 60% No BT No MB
Run051	E 20k	Tide HW -0.5 hr	Tugs 50% No BT No MB

Conclusion: presented no difficulties



294m Containership 11m Draft Departures 3 Tugs BB (70T aft) Taka (50T Fwd) MB (28T Fwd) BT available. Swing to depart

Run052E	NW 20k	Tide HW +0.5 hr	BB lost when off the wharf. Taka to aft. Push back to wharf
Run053E	NW 20K	Tide HW +0.5 hr	ME Lost when off the wharf. Push back to wharf . Angle tugs to control

Conclusion: Controlled but had to abort departure and return to wharf.