

DFDS Deadline 5 Submission - IOH Manoeuvring Explanatory Note

1. The Applicant has repeatedly stated that the manoeuvring for the Proposed Development is similar in nature to that of the Immingham Outer Harbour (IOH) and that IOH bound vessels face identical risks to in terms of proximity to vessels handling dangerous liquid cargo in bulk. DFDS do not believe this to be the case and have therefore asked their senior masters to provide a narrative to demonstrate the key differences.
2. The key differences between the Proposed Development and the IOH are three-fold:
 - 2.1. The fact that DFDS are able to produce specific manoeuvres for ebb and flood tides allows better control of risk;
 - 2.2. The space available to the north of the IOH makes aborts much safer and easier to execute; and
 - 2.3. There is no tide within the IOH so the manoeuvres onto the berth are always in slack water.

Ebb Approach

3. Due to the amount of fresh water that drains through the Humber estuary and its tributaries the ebb tide is generally faster than the flood tide. The ebb tide runs at around 135° which puts the ebb largely in line with the Immingham Bulk Terminal (IBT) (line of berth 315°/135°) but at an angle to the east and west jetties (line of berths approximately 301°/121°) and Immingham Oil Terminal (IOT) (line of berth 292°/112°).
4. The IOH ebb approach has two alternatives:
 - 4.1. The IBT 'J-Turn' approach; and
 - 4.2. The Clay Huts loop approach.

The IBT 'J-Turn' – Figure 1

5. This is the most used ebb manoeuvre as it is designed for south westerly and westerly winds, which are the predominant direction of wind in the Immingham area. The manoeuvre involves the IOH vessel pulling up alongside the IBT (or vessel moored there) and reversing around the eastern end of the IBT into the IOH. Once within the outer harbour the vessel is in an area of slack water and can then conduct the second part of the manoeuvre onto the berth.
6. The reason why this manoeuvre is chosen in a south westerly wind is that should the vessel suffer a mechanical issue she is already 'head to tide' and therefore not being pushed one way or the other by the tide and the wind will carry the vessel away from the IBT or vessel moored there.

The Clay Huts Loop – Figure 2

7. In northerly or north easterly winds the J-turn risks the IOH bound vessel being pushed into the IBT or vessel moored thereon and therefore a different manoeuvre is conducted

in which a wide turn is taken around the Clay Huts and the vessel brought initially stern to tide and then when off the IOH entrance the stern is turned toward the IOH and this allows the tide and wind to carry the vessel into the outer harbour. Again, once in the slack water conditions of the outer harbour the vessel can then conduct the second part of the manoeuvre with only the wind to contend with.

Flood Approach - Figures 3 & 4

8. With a flood tide IOH vessels are able to enter the IOH directly due the fact that once inside there is no tidal flow and they are therefore able to swing the vessel and make the second stage of the manoeuvre in these slack water conditions.
9. In all of these approach manoeuvres there is ample space in which to abort the manoeuvre and the final stage of the manoeuvre always happens in slack water within the IOH.
10. With a north easterly or northerly wind an extra step is added in which the vessel is stopped head to tide and we check that the vessel can be held up to the wind using the vessel's machinery. If this is confirmed, the manoeuvre can proceed, if not, the arrival is required to be aborted until tugs are available.

Flood Departure – Figure 5

11. The flood departure manoeuvre is straightforward due to the tide always being on the vessel's starboard bow. The effect of this is to push the vessel to the north away from danger and into safe water.
12. The strength of the tide on the starboard bow pushes the vessel away from the Western Jetty and into the river therefore providing it is safe to leave the berth in the prevailing wind conditions the tide effect will always be stronger than the wind. Therefore the same manoeuvre is used in N-NE winds and S-SW winds.

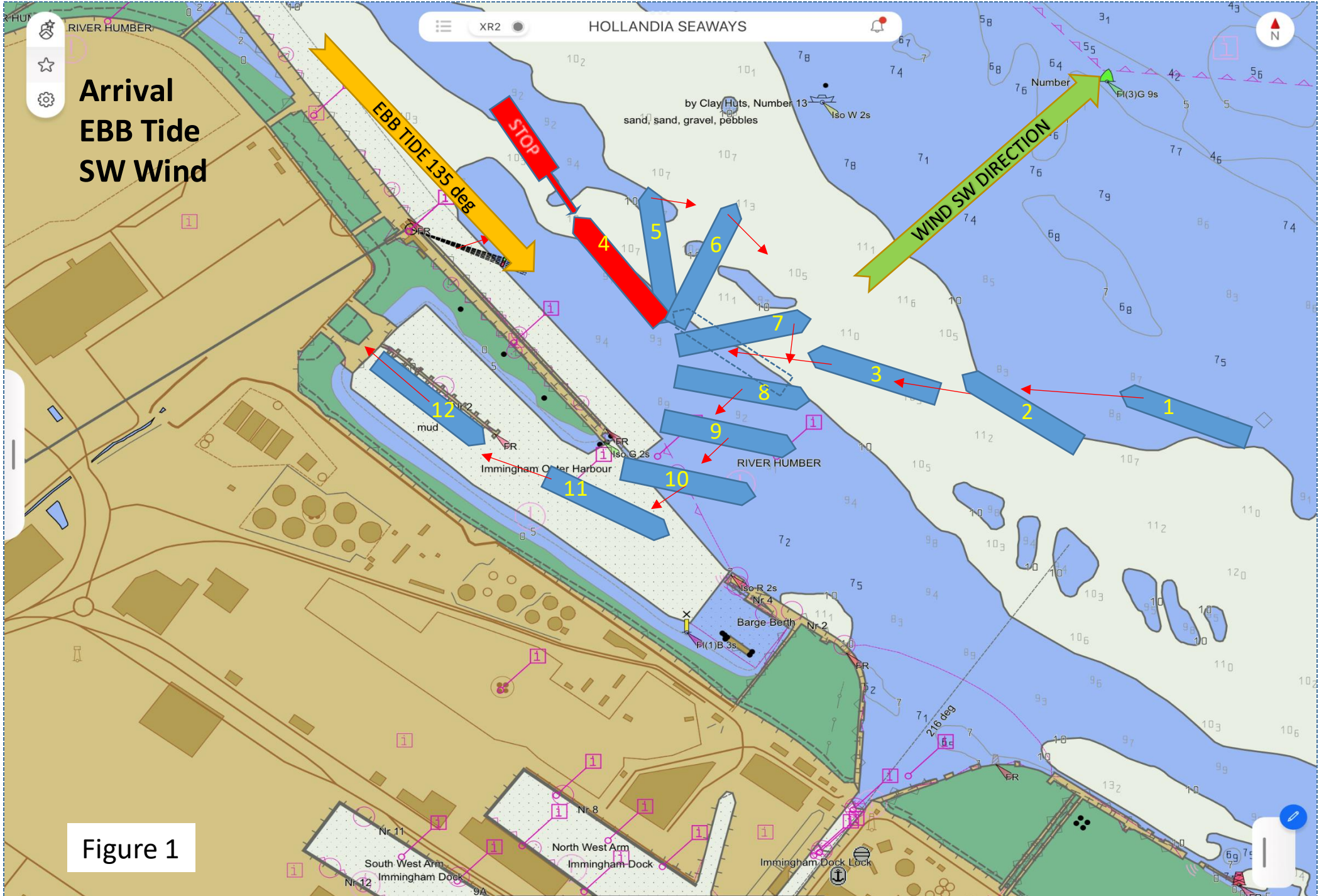
Ebb Departure – Figures 6 & 7

13. The ebb departure has two options depending upon the wind.
14. On the ebb tide with a south westerly wind vessels swing around the eastern extremity of the bulk terminal turning toward the tide until sufficient separation is achieved from the IBT at which point the vessel can then turn back toward the IOT and proceed outward.
15. With a northerly or north easterly wind we reverse the vessel out into the river, using the force of the tide on the starboard quarter to help push the vessel out into the river.

Key Differences between IOH and the proposed development

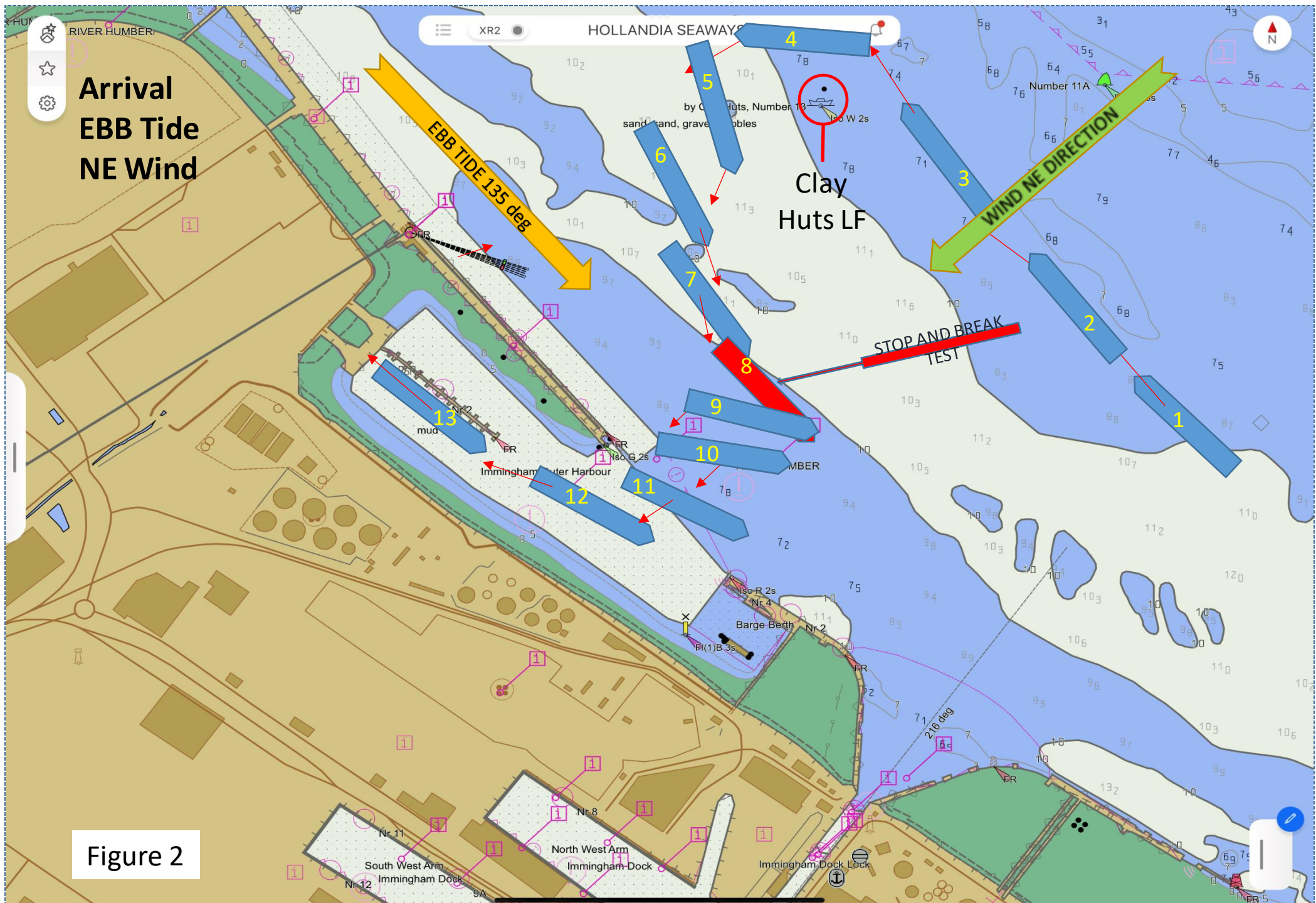
16. The IOH has four different approaches and three different departure manoeuvres designed for the common environmental conditions experienced in the Immingham area. Each approach or departure is designed to ensure the greatest level of control and escape options should something unexpected occur.

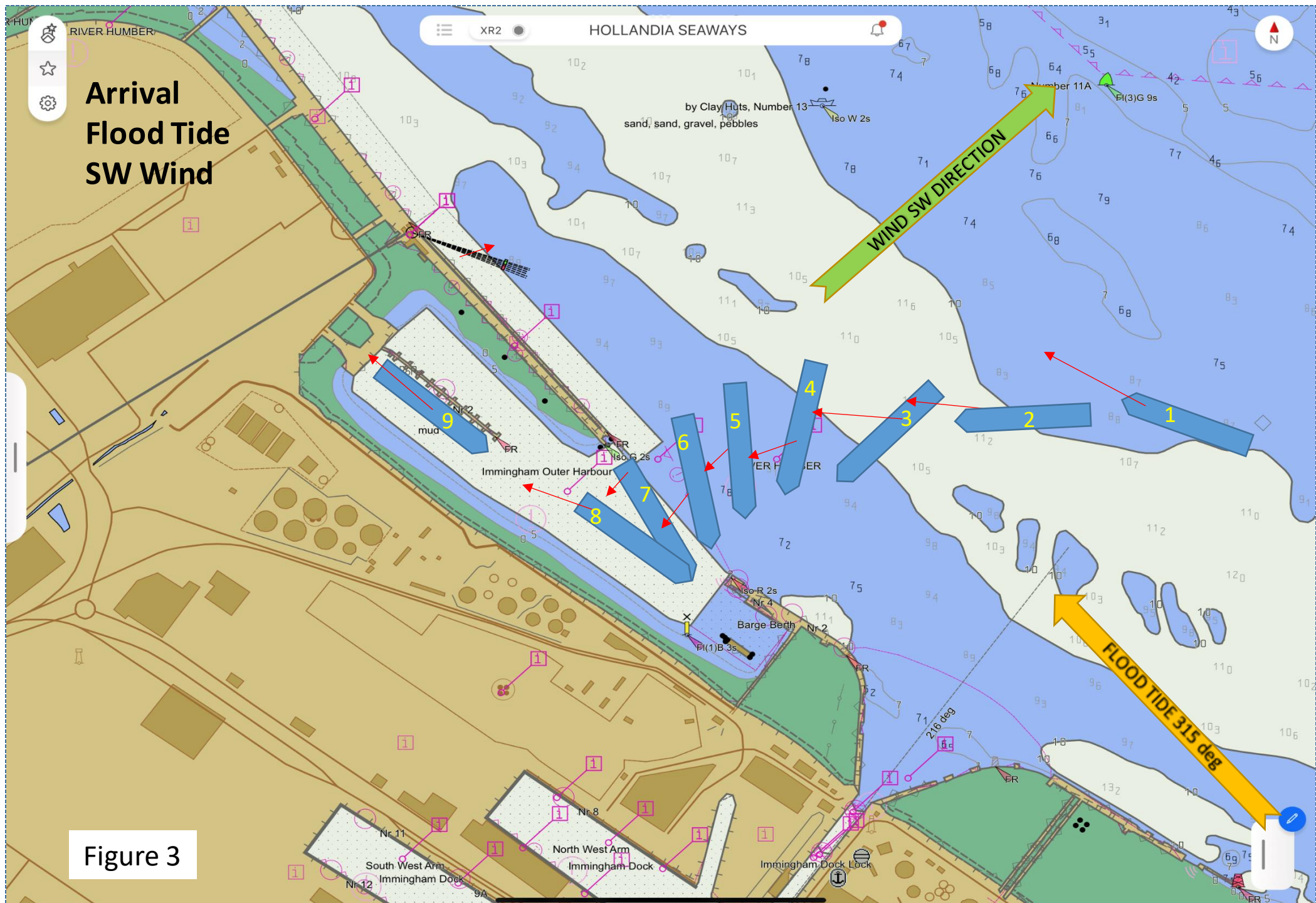
17. The IERRT in contrast requires a similar approach each time regardless of tide and wind making this more complex.
18. There is no noticeable tidal flow within the IOH. These slack water conditions mean that the final stages of the manoeuvring when close to port infrastructure is only influenced by the wind.
19. The IERRT in contrast has the tide running through the structure which requires the master to balance both tide and wind when manoeuvring for the berth.
20. Whilst IOH vessels are close to the IBT vessels when conducting the 'J-turn' the tide runs parallel to the IBT berth and vessels only complete this manoeuvre when the wind is such that it would carry them away from the IBT berth. IOH vessels do not come close to the chemical tankers berthed on Western Jetty as part of either arrival or departure manoeuvres.
21. The IERRT in contrast requires vessels to pass close to the chemical tankers on the Eastern Jetty as part of every manoeuvre on or off berths 2 and 3 and close to the fuel carrying tankers of IOT finger pier when manoeuvring on/off berth 1.
22. IOH vessels always have space to the north in case of an emergency whereas IERRT vessels are constrained on all sides by critical infrastructure and hazardous cargoes.



Arrival
EBB Tide
SW Wind

Figure 1





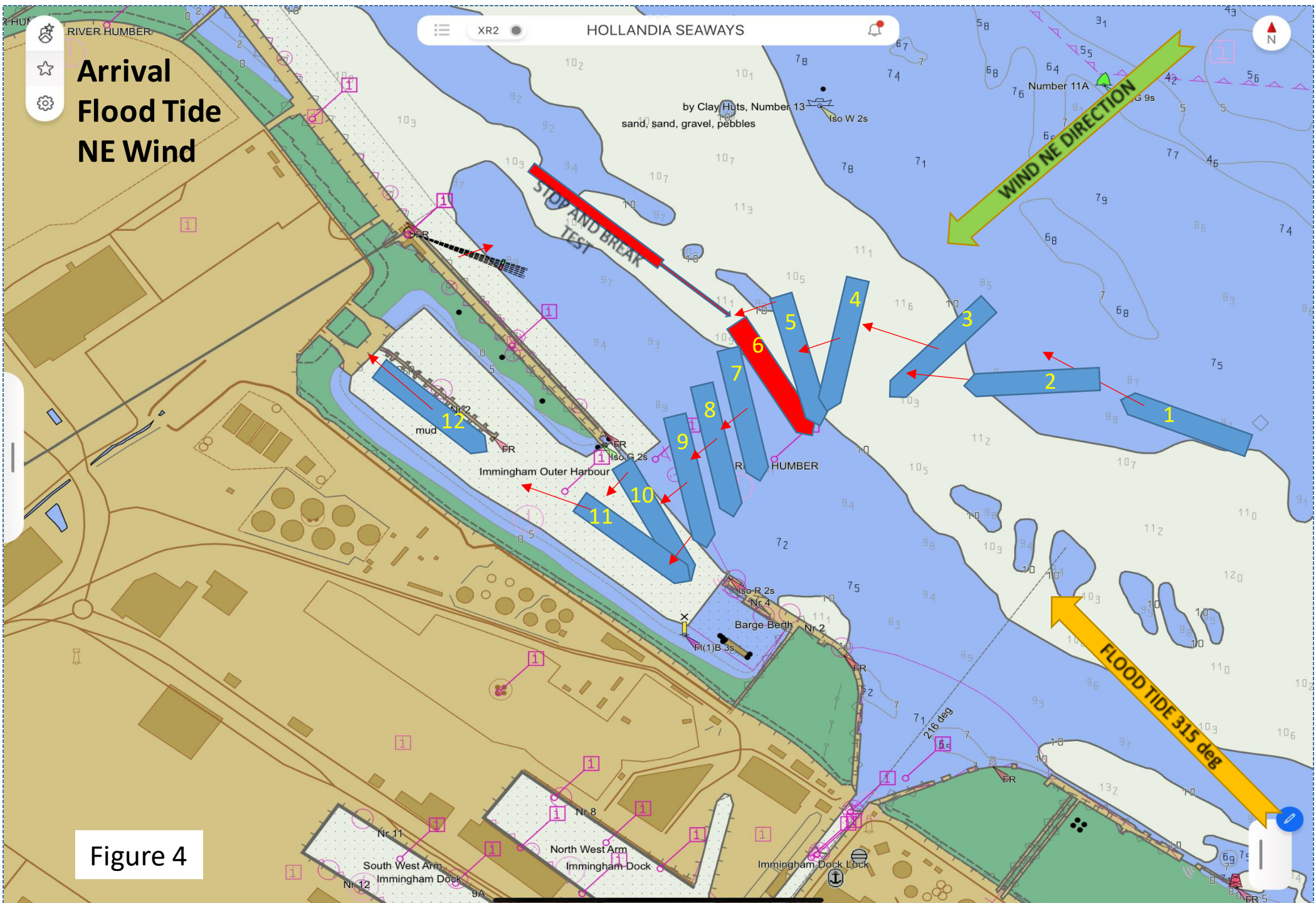


Figure 4

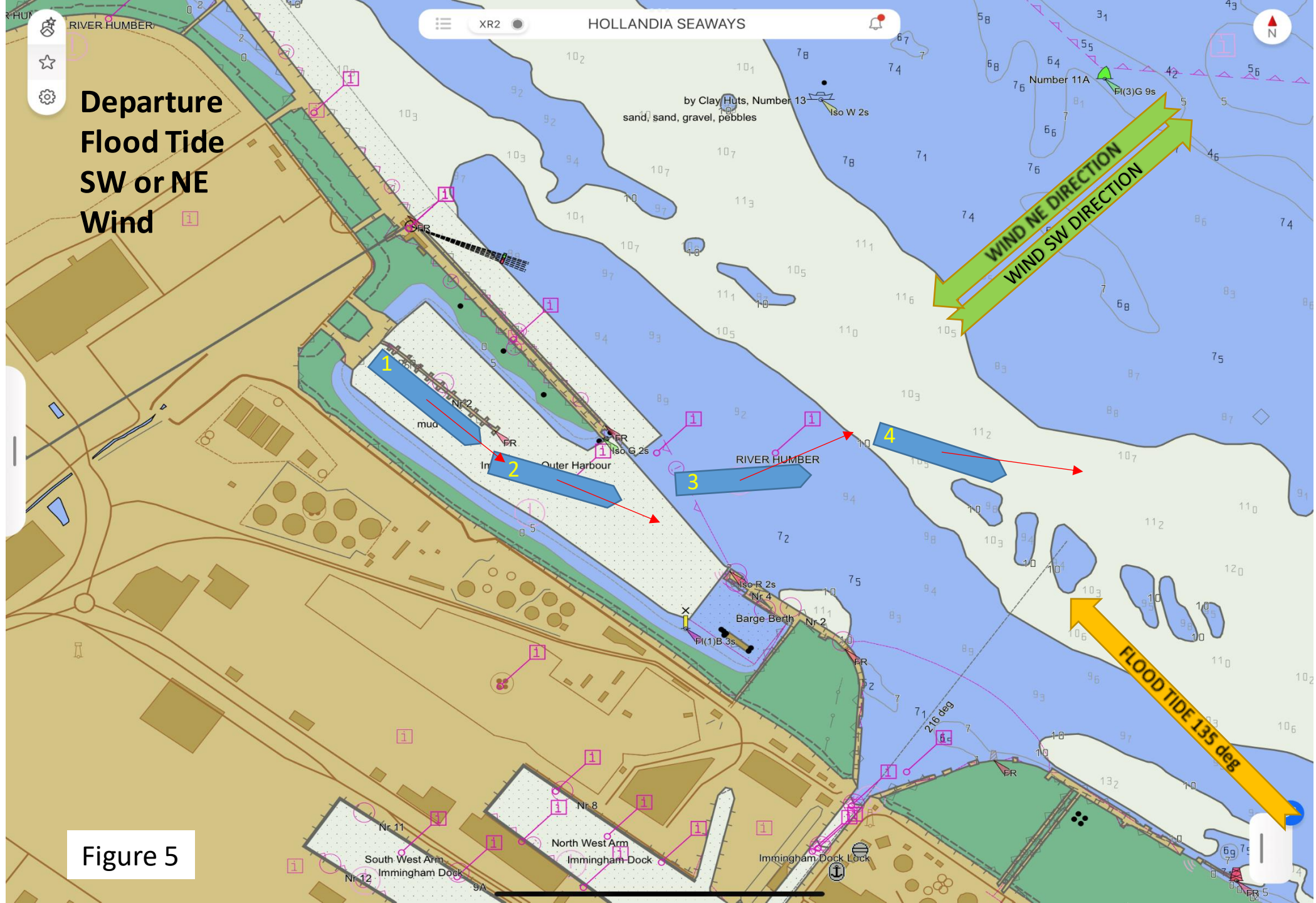


Figure 5

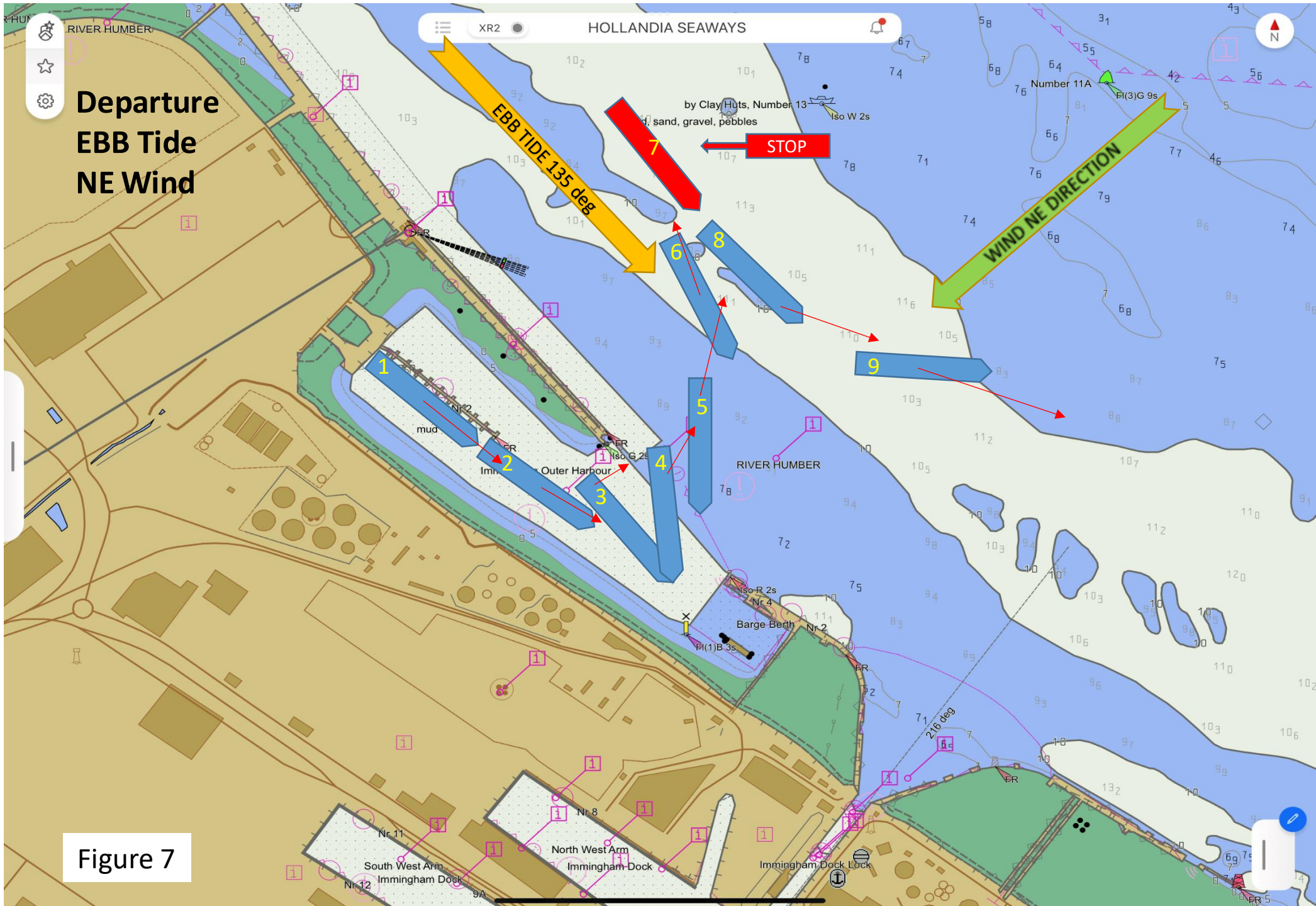


Figure 7