

IMMINGHAM EASTERN RO-RO TERMINAL DCO APPLICATION

PINS REFERENCE TR030007

DFDS' COMMENTS ON DEADLINE 2 SUBMISSIONS

PART 1: COMMENTS ON WRITTEN REPRESENTATIONS

Harbour Master, Humber [[REP2-054](#)]

1. Paragraph 11 refers to the Designated Person for HES, but does not say who it is. The Designated Person (sometimes referred to as the Technical Authority) for HES is the same as for all ABP Ports. We understand that James Clark who was the Designated Person from the outset of this project is no longer working for the Applicant and that the current Designated Person is Gareth Robins.
2. Paragraph 12 refers to consent for works below Mean High Water Springs, but does not mention that this can be done by DCO and what residual consents would be required in that case.
3. Paragraph 26 states that the Harbour Master, Humber considered the direction of current to be incorrect in the simulations, which is what DFDS has repeatedly alleged. The simulations should be re-run and the NRA redrafted with the correct current direction.
4. In paragraphs 28 and 29 the Harbour Master states that he attended the HAZID workshops on 7 April and 16-17 August 2022 and the stakeholder simulations on 28-30 November 2022., but he told DFDS at a meeting on 13 October 2022 that he had not read any of the simulation reports, despite sending the undated letter a month earlier.
5. Paragraph 31 states that high levels of aborts and fails should be expected in simulations. Whilst aborts and fails should form part of the process, one in which the Applicant refines and distils until they arrive at the point where they are operating safely to all berths, the Applicant's simulations feel random and suffer from an uneven distribution between the three berths. There is a distinct lack of a systematic approach, which undermines the overall value of the simulations.
6. The failure of the Applicant to adequately simulate manoeuvres on and off Berth 3 in particular is of serious concern to DFDS, given the risks involved with the hazardous chemical cargoes that are routinely handled on the Eastern Jetty. Furthermore, it appears that the Eastern Jetty Tug Barge, which is immediately adjacent to Berth 3 does not figure in the simulation model, which is a serious omission as it should be considered in the intended attempt to identify the safest manoeuvres to and from both Berth 2 and 3.
7. Paragraph 32 refers to the small proportion of additional vessels that this project will create compared with the Humber as a whole, but that is not relevant as it is the concentration of vessels in Immingham that is where the congestion and risks will occur.

Immingham Oil Terminal Operators [[REP2-062](#)]

8. DFDS agree with the conclusions of the Navigational Risk Assessment commissioned by the Immingham Oil Terminal Operators [[REP2-064](#)] and note in particular that it also requires (a) berths 8 and 9 of the IOT finger pier to be moved and (b) the impact protection for the finger pier to be installed as necessary mitigation to make the project acceptable.

PART 2: COMMENTS ON ANSWERS TO QUESTIONS

The Applicant's answers [REP2-009]

Question BGC.1.11 - stemming

9. DFDS accept that given the current numbers of vessel movements in and out of Immingham dock, six additional movements would not have a material impact over a 24-hour period. However the Applicant fails to acknowledge in this response that the service that will operate to the terminal is a scheduled liner service in two very narrow windows with arrivals anticipated between 0600-0800 and departures 1800-2000. The impact will be significant during these periods both in terms of the outer dock stemming areas being out of use when vessels are manoeuvring and the knock-on impact this will have on lock productivity in combination with Standing Notice To Mariners SH22.

Question BGC.1.13 - BNG

10. It would be helpful to see the before and after biodiversity metric calculations to assess the benefit to be attributed to the proposed measures.

Question NS.1.1 - consensus

11. In its Relevant Representation [RR-013], the Maritime and Coastguard Agency directs the Applicant to the Port Marine Safety Code (PMSC) and its Guide to Good Practice [REP1-016], regarding risk assessment. The PMSC stresses the value of stakeholder consensus as an intrinsic component of any Navigational Risk Assessment, paragraph 4.2.3 notes: '*...it is also very important to involve port users, practitioners, operators and those with an interest in the operation of the port, as necessary. They too have a significant contribution to make to the development and maintenance of the safety management system.*'

12. DFDS remain of the view that stakeholders were in many instances ignored in the HAZID workshops when their views did not align with those of the Applicant and that the process of assessing tolerability of risks has not been transparent.

Question NS.1.11 – aborted run 59

13. This run was selected by the Inspector, Mr Bradley, not DFDS or IOTT, so it is unreasonable to suggest this was a waste of ISH time by either of those two companies.

14. Whilst the wind used in this simulation may only occur for 1% of the time on the runway at Humberside airport, our experienced masters know that winds with a northerly component are not rare events and once wind gusts are taken into account such events are much more commonplace than the Applicant would suggest.

Question NS.1.13 – trigger for implementation of IOT impact protection

15. A flow diagram was requested but has not been provided; the answer that is provided is very unclear as to what the process actually is. The 'governance' paper submitted at Deadline 1 [REP1-014] is referred to but without any specific references; it does not mention the impact protection.

16. The Examining Authority and interested parties need to have some idea of what circumstances would trigger the provision of the impact protection, noting that both the IOTT and DFDS Navigational Risk Assessments require it to be carried out to avoid intolerable risks.

Question NS.1.16 – availability of tugs

17. The Applicant seems to suggest that there will be no issue with tug availability on the Humber as 'market forces' will always ensure adequate provision, but resists any suggestion that such a provision should be included in the DCO. DFDS are of the opinion that the simulations [APP-090 and APP-091], the Applicant's NRA [APP-089] and DFDS's NRA [REP2-043] demonstrate a clear need for towage in order to ensure the proposed development can operate safely and that provision should be added to the DCO to ensure estuarial safety. The NRA commissioned by DFDS demonstrates quite clearly that whilst physical mitigation may be possible for the IOT finger pier and trunkway (see paragraph 8.6 of REP2-043), in terms of relocation and impact protection, the only effective mitigation in relation to the Immingham Eastern Jetty is mandatory tug provision (see paragraph 8.2 of REP2-043). Given the inherent danger involved with the types of vessels and dangerous chemicals routinely handled at the Eastern Jetty, DFDS are of the opinion that such provisions are fundamental to the overall safety of the proposed development and thus should be required by the DCO.

Question NS.1.18 – direction of current

18. As mentioned below, the Harbour Master, Humber, agreed with DFDS that the direction of current was wrong, at least initially.

19. DFDS has no practical experience of the tidal flows in the vicinity of the proposed development and so are not able to comment on the current in this area. However, DFDS' masters and our consultant and ex Humber Pilot Jonathan Bush, have decades of experience of the current north of the IOT and the Immingham bellmouth, both of which are, in DFDS' opinion, incorrect in the simulated environment. The current data is widely recognised in the Applicant's published guidance (REP2-038) and was also acknowledged by the Applicant's witness, Mr Mike Parr of HR Wallingford, at ISH2 [EV3-009]. The reason why this is important is twofold:

- a. If the tide as modelled is clearly wrong in these areas, how can the Examining Authority have complete confidence in the tide as modelled in the location of the proposed development. This is the reason why DFDS has suggested a much wider, more comprehensive tidal study that would resolve this issue;
- b. As the tide as modelled is wrong in the area north of the IOT, the initial manoeuvres conducted on each of the simulations is significantly less challenging and therefore simply not representative of a 'real world' initial approach and therefore significantly underestimates the difficulty and reduces the validity of the simulated manoeuvres.

Question NS.1.26 – increase in vessel movements

20. The answer notes that there would be a gross increase of 42 vessel movements and a net increase of 28 vessel movements (given that 14 vessel movements of Stena are already at Immingham and will move to the IERRT). Added to the week of 24 July's movements, these represent a 21.9% and 14.6% increase respectively. It is unhelpful to say that this is less than the peak number

of movements recorded during the last 18 months, because these new vessel movements would also be added to the peak.

Question TT.1.1 – HGV throughput

21. The Applicant has indicated in their response to TT.1.1 ‘*The Transport Assessment [AS-008] makes clear at paragraph 5.2.3 that the overall capability of the terminal (and, therefore, the maximum throughput assessed within both the TA and the ES) is 1,800 units per day / 660,000 units per year.*’ This statement does not provide any evidence (e.g. calculations, assessment of trailer slots and lane metres, assessment of dwell rates, etc) to justify the capacity of the terminal for 1,800 vehicles per day and 660,000 units per year.

22. DFDS has independently calculated the terminal capacity to be around 300,000 units (accompanied, unaccompanied and containerised units) [REP2-040], paragraph 153. DFDS’ figure is similar to CLdN’s figure of 194,926 for unaccompanied units only (CLdN’s figure needs the addition of accompanied and containerised units to define the total terminal capacity) in its Written Representation [REP2-031], paragraph 2.48. DFDS is concerned that the current terminal design does not match the intended annual throughput, the implications of which have not been assessed by the Applicant. The congestion of the terminal will likely lead, at a minimum, to vehicles queuing to enter the terminal creating congestion on the port internal road network.

23. The Applicant has indicated an intent to revise Chapter 2 of the ES [APP-038] with the new annual figure [REP2-009], however no indications have been provided regarding capturing this change within the dDCO [REP1-004]. Without revision to the dDCO, the control limit remains at 660,000 units per year, raising the concern that higher than average daily peak volumes should be assessed, 125% higher than current figures (i.e. circa 2,200 units per day). This has been further described within DFDS Written Representation [REP2-040], paragraph 155. The Applicant said in meetings following ISH2 that a daily cap of 1,800 units would be considered but this has not been referred to in the Deadline 2 submissions.

Question TT.1.2 – HGV parking outside port

24. As the intent of the IERRT operations are to mainly focus on unaccompanied units (which will leverage the terminal as a holding facility with associated dwell rates) rather than accompanied units, DFDS would typically have no comments to the responses provided by the Applicant to TT.1.2. However, as per the comments to the Applicant’s response of TT.1.1 (see paragraphs 22-24 above), based on the limited capacity of the terminal compared to the anticipated throughput, the terminal would regularly exceed the terminal capacity leading to implications on the road network including congestion and queuing of vehicles which has not been assessed by the applicant. Queuing on the road network can lead to higher demand of offsite HGV accommodation.

Question TT.1.5 – internal port junctions

25. The internal port junctions assessment [AS-008] should be revised considering the cumulative impacts of the daily peak volume (see response to TT.1.1 above), the assignment between the West and East Gate, the number of tractor-only units, and congestion on the road network (either internal within the port or external) caused by the terminal exceeding capacity. This assessment should also consider the range of variables being presented for each of these items (i.e. scenario 1 tests the worst-case volume to the West Gate, scenario 2 tests the worst case volume to the East Gate).

Question TT.1.6 – assessment of simultaneous construction and operation

26. Paragraph 7.8.1 of the Environmental Statement [APP-053] explicitly states that the construction and subsequent operation of the development have been assessed (emphasis added). This answer does not constitute an assessment of simultaneous construction and operation (and in any event only deals with one assessment topic). Unless the Applicant supplements the Environmental Statement with an assessment of simultaneous construction and operation, the DCO should be amended to forbid it.

The Harbour Master, Humber's answers

Question BGC.1.11 – stemming [REP2-057]

27. DFDS accept that given the current numbers of vessel movements in and out of Immingham dock, six additional movements would not have a material impact over a 24-hour period. However the Applicant fails to acknowledge in this response that the service that will operate to the terminal is a scheduled liner service in two very narrow windows with arrivals anticipated between 0600-0800 and departures 1800-2000. The impact will be significant during these periods both in terms of the outer dock stemming areas being out of use when vessels are manoeuvring and the knock-on impact this will have on lock productivity in combination with Standing Notice To Mariners SH22. DFDS do not agree with the assertion by the Harbour Master that there will be no impact on stemming.

Question NS.1.7 – Aberdeen/Xuchanghai incident [REP2-060]

28. The Harbour Authorities statement confirms that tugs were indeed fast (i.e. secured to the vessel), albeit the pilot did not know if the aft tug was fast but the statement '*...the vessel lost control with tugs fast*' is accurate.

North Lincolnshire Council's answers [REP2-026]

TT.1.7 – statutory compliance

29. As stated within DFDS' Written Representation [REP2-040] and further responses in this document, DFDS consider that the assessment of the East versus West Gate split requires revision, the Applicant is required to provide justification of the split ratio utilised, and the Applicant should complete a sensitivity test assessing the worst case at the East Gate (i.e. 100% of the IERRT volume) and at the West Gate (82% as per current conditions or similar once justified by the Applicant).

North East Lincolnshire Council's answers [REP2-025]

30. DFDS agree that simultaneous construction and operation have not been assessed for transport impacts (and many others).

PART 3: COMMENTS ON OTHER DEADLINE 2 SUBMISSIONS

The Applicant's comments on Deadline 1 submissions [REP2-010]

Survey data, page 11

31. The Applicant's response provided to 'The use of 2021 data' insinuates that during a meeting held between traffic consultants of the Applicant and Interested Parties (held 30 August 2023), all attendees agreed that '*the additional survey work undertaken in 2023 confirms that the survey work adopted in the TA is robust and representative*'. This is not a true reflection of the discussion. All attendees confirmed that in principle there are no issues with the 2023 survey data provided by the Applicant and agreed that 2023 data reflects the 2021 data in terms of existing traffic volumes on the network. However, there was not agreement that traffic volumes were back to normal conditions.

32. In addition, during the transport consultant workshops, it was agreed, noting the guidance quoted by the Applicant had been cancelled, that traffic survey data from the last 5 years would be considered. This includes the Killingholme Power Plant Project data which was captured in 2019 and presented in 2020. This data showed correlation to other recent transport assessments that had concluded that several junctions on the A1173 and A160 were congested and over capacity when considering their particular development traffic [REP1-033].

33. To address the questions around volumes returning to normal, the Applicant has undertaken a more detailed assessment of the variations between driving behaviours prior to 2019 (i.e. prior to the pandemic) and within 2021 through to 2023 as suggested by DFDS during the meeting. DFDS acknowledge this assessment has followed the process discussed at the meetings between transport consultants and the 2021 baseline traffic volumes are suitably justified.

34. However, for a period of such uncertainty, the Applicant has not taken into account any sensitivity analysis of the baseline traffic flows. For example, data captured by DFDS in 2022 [REP1-029] showed traffic volumes on the A160 around 20% higher than the Applicant's figures.

35. Minutes of the meeting held on the 30 August were provided late to the attendees on 5 September, a few hours prior to the Deadline 2 submission deadline. As such, the minutes have not been reviewed by all attendees (namely DFDS and CLdN) and should be considered as draft, and actions were not confirmed with sufficient time to allow submission at Deadline 2. DFDS is actively working through actions identified during the meeting and will provide the details agreed, including clarifications requested around committed developments.

Tractor-only unit ratio, page 14

36. The Applicant has yet to provide justification of their basis for their 10% tractor-only assumption.

37. DFDS has provided Port of Immingham data regarding counts of empty goods vehicles as an example of what could be used for justification (i.e. similar evidence should be provided by the intended operator for current and future conditions). This data was provided in DFDS' response to Action Point 12 [REP1-030] and Written Representation [REP2-040]. In both cases DFDS has requested that the Applicant provide evidence to support the assumption of tractor only movements.

It is anticipated that this evidence would be sourced from the intended operator of the IERRT facility for correlations with intended activities.

38. The Applicant has suggested a focus on unaccompanied Ro-Ro units only and presented results which claim to deduct containerised trade from numbers presented in DFDS' response to Action Point 12 [REP1-030]. As such, the Applicant has presented an assessment [REP2-010] where they have deducted the number of tractors and skeleton trailers (i.e. empty trailers associated with container movements), reducing the proposed tractor only figure from the 19% average to 12%.

39. However, the Applicant's approach is still incorrect as it fails to remove the number of laden container movements from the total number of vehicle movements, therefore resulting in underestimating the tractor-only number when specifically looking at unaccompanied Ro-Ro traffic only, which would likely be back in the range of 19%, as DFDS maintains.

Accompanied/unaccompanied cargo split, page 15

40. DFDS acknowledge the analysis conducted on the data for the first six months of 2023 from Stena Line, and the sensitivity analysis conducted by the Applicant. Whilst, in isolation, the accompanied / unaccompanied split has a non-material impact on the Transport Assessment, due to the variations in impacts of accompanied and unaccompanied freight units, and the uncertainty of future freight unit modes (i.e. either accompanied or unaccompanied), DFDS' recommendation remains that the range of distributions identified is to be carried through the transport assessment in combination with all other impacts (i.e. a cumulative assessment).

East/West Gate journey times, page 16

41. The Applicant response indicates that their analysis conflicts with DFDS' as DFDS' analysis indicates a one minute difference in journey times in favour of the East Gate, versus the Applicant's assessment which indicates a two minutes difference in favour of the East Gate. This is materially the same. The Applicant does not justify how a two minute difference will instigate behavioural changes.

42. It is DFDS' view that differences in journey time would, on its own, be unlikely to justify the heavy weighting towards the use of the East Gate without the implementation of management controls which would essentially remove natural route choice and enforce the use of prescribed routes to the IERRT.

Facilities, page 17

43. The applicant has provided a plan showing the location of truck stops within the local area and indicated that they have noted the presence of depots and haulage sites as indicated Figure 1 of Action Point 15 [REP1-032]. The applicant then states that the majority of these sites are located on the A1173 corridor. DFDS disagree with this view, as there are a number of facilities located on the A160, Manby Roads and other areas outside of the A1173 corridor, and when considering volume of vehicle interactions and size of facilities, this results in a consistent spread of capacity across the ports perimeter.

44. Whilst the applicant notes the existence of other facilities beyond what has been assessed within the Transport Assessment [AS-008], these facilities have not yet been taken into account by

the Applicant regarding vehicle movements (destination and origin) or trip generation (for tractor only movements as would be the case from depots or similar facilities).

45. The Applicant then states that '*The majority of demand for those movements (as set out in the TA [AS-008] at Table 12) is longer distance movements and there is no reason why these movements would want (or indeed need) to stop locally*'. DFDS disagrees with this statement as unaccompanied goods typically have a longer shelf life and are more susceptible to being stored within warehouses or distribution centres. This is particularly true for groupage movements where consignments need to be broken down to suit delivery destinations.

46. DFDS' operational experience of the local area indicates that several short shunting movements from the port to nearby facilities is typical for the logistics movements in the area. For example, there are customers of DFDS on the A160 and Eastfield Road (which crosses the A160 at the Jet Garage). These are DFDS Special Cargo, DSV Road, N-TEX, Trailertrans and Den Hartogh (note, most of these facilities are not exclusive to DFDS operations). These customers represent over 110,000 units per year for DFDS. These companies use their base locations as consolidation hubs for mixed (groupage) loads, and units are often taken to and from the port to these facilities by a local shunt driver before being onward delivered to destination. The Applicant's statement is at odds with the fact that distribution centres and warehouses are located near ports for this very particular reason.

47. The Applicant's statement insinuates that only truck stops have been considered within the Transport Assessments [AS-008] trip generation calculations, which therefore risks underestimating local movements on the road network and drivers for East versus West gate selection as discussed within DFDS Written Representation [REP2-054].

Way Finding, page 17-18

48. The Applicant says that it is in discussion with National Highways and the Council about upgrading wayfinding but that this is not part of the IERRT project, nor have any details of the proposed amendments been provided to interested parties for review. It is requested that the Applicant confirm which Council they are in discussions with (i.e. NELC and/or NLC) and confirm, should the presence of signs be assumed or not, as to what difference this will make to existing and future driver behaviour. If the signage is not part of this application then its existence cannot be relied upon.

Gate capacity and split, pages 17-19

49. The Applicant has dismissed DFDS' split of 82%/18% West/East Gate despite the evidence DFDS has provided. The Applicant is now proposing to test 30% of vehicles going to the West Gate, but did not mention this at any of the workshops that took place between transport consultants since ISH2 for consideration between the interested parties. No justification for the 30% figure has been provided.

50. With 30% of vehicles going to the West Gate, the queue length increases from the current 12 to 20. The available road length could accommodate 25 vehicles. If the gate ratio was around 45-50% to the West Gate or more for IERRT then this queue length would be exceeded, as such having a justified ratio is critical to determining the level of impact to congestion at the West Gate.

51. Throughout all the responses provided by the Applicant, the impacts of varying the design parameters have only been considered by others and not the Applicant. As stated throughout DFDS

responses, and as captured in our Written Representation [REP2-040], the Transport Assessment should be revised considering the cumulative impacts of the daily peak volume, the assignment between the West and East Gate, the number of tractor only units, and congestion on the road network (either internal within the port or external) caused by the terminal exceeding capacity.

52. For example, if the additional tractor-only movements were added, the West Gate would only have capacity to handle a ratio of around 40% prior to tail backs at the Gate House leading to queuing on the road network.

53. In terms of sensitivity testing, the Applicant's base case is that 100% of IERRT traffic will use the East Gate but they have not assessed this.

Junction capacity, page 20

54. The Transport Assessment should be revised considering the cumulative impacts of the daily peak volume, the assignment between the West and East Gate, the number of tractor-only units, and congestion on the road network (either internal within the port or external) caused by the terminal exceeding capacity.

Tidal direction, page 22

55. It is telling that the Harbour Master, Humber, in his written representation [REP2-054], paragraph 26, comments that the tide used in the simulations was not in the direction he expected. It is not clear if he maintains this view.

56. Both DFDS and the Applicant agree that the tide as indicated on the simulations is incorrect north of the IOT. Both parties agree that nobody has 'real world' experience of tide in the vicinity of the proposed development. HR Wallingford stated in a simulation report shared with stakeholders prior the August 2022 HAZID workshop (extract appended to this document) that the tidal data taken from the site of the proposed development matched their modelled data for the wider Immingham/Humber area.

57. Given that all parties agree that the tide north of the IOT is incorrect in the simulated environment this raises doubts about the veracity of the tide data in the vicinity of the proposed development and to what extent that is also incorrect. Therefore, the prudent approach would be for the Applicant to acquire data for a much wider area, using a greater number of locations, which includes the areas we do have experience of and those that we do not, to conclusively demonstrate the correct tides north of IOT and in the vicinity of the proposed development.

Extent of aborted simulations, page 22-23

58. This run was selected by the Inspector, Mr Bradley, not DFDS or IOT, during IHS2. The Examining Authority asked DFDS to explain its understanding of what is shown in this simulation run. DFDS's concern with this particular simulation is not that the simulation run was aborted, but rather when it was aborted. To abort a simulation immediately prior to an allision, which would have been categorised as a 'Failed' simulator run if left to run for a few seconds more, is not consistent with good practice. If indeed the pilot had decided his turn to port had been 'premature', as the Applicant suggests, it is unclear why the pilot did not 'abort' the simulation earlier. The fact that the pilot only

aborted the simulation late in the manoeuvre suggests the pilot was unaware of his mistake until the immediately before a potential allision.

59. A simulation has three main objectives:

- a. Is the proposed development feasible? Is there physically enough room to berth vessels, is its orientation correct, is its proximity to other infrastructure problematic? Once these issue have been resolved we move on to the next stage;
- b. 'Proof of Concept' in which we would test manoeuvring on and off the terminal in relatively benign conditions to gauge how easy or difficult this is and make any modifications such as it's proximity to other port infrastructure, distance between terminal berths etc; and
- c. Test of the limits. Establish the limits of operation, decide when tugs are required, the wind and tidal flow limits, the amount of towage that might be required and the possible limitation on berthing in certain conditions.

60. In response to the Applicant's comment made in pages 22-24 of [REP2-010](#) (which responds to DFDS's Deadline 1 submission [REP1-028](#)), regarding the issues around simulation run 59, DFDS were specifically asked by the Inspector, Mr Bradley, as to what their thoughts are on this particular incident and as requested gave our interpretation of the scenario.

61. DFDS take exception to the comment make that '*DFDS attempted to make this a point of amusement*'. DFDS prioritises health and safety above all else and as a responsible operator, DFDS has an obligation to highlight any activity that is a risk to individuals, infrastructure, or assets. DFDS have serious concerns on the validity of some of the simulations, which sole purpose are to show the new terminal is safe to use, and simply wants to point out that aborting a simulation just prior to an allision, should have been categorised as a 'Failed' simulator run, and not as 'Aborted' as the Applicant did, which is not consistent with good practice. DFDS do not refute that there are times when an ability to abort an approach can be done and a safe manoeuvre made to realign, however we simply believe that in this case there would be insufficient time or space to do so and an allision would have been inevitable. DFDS also pointed out that the simulation in question did not correctly reflect the tidal conditions where the manoeuvre commenced which will have had impact on the manoeuvre as a whole.

62. At ISH2, when discussing this particular issue, the analogy of reversing a car into a parking space was used and again DFDS simply pointed out that where a car can stop nearly immediately, the same is not the case for vessel as they continue to move even after all engines are stopped. Therefore, it is not as simple as stopping and trying again. DFDS find this to be an approach that puts individuals, vessels, and berthing infrastructure at risk.

63. DFDS recognises that they were present at the stakeholder simulations and, as stated in DFDS' Deadline 2 submissions, do not have any additional comments other than that the current is incorrect north of IOT and only one simulation was carried out on Berth 3.

64. DFDS are of the opinion that simulating dropping an anchor (Run 27) on a simulation where all participants are expecting an engine failure is not representative of a 'real world' scenario. It is also clear that this test was carried out well clear of port infrastructure and that if such a machinery

loss was to happen when a vessel was in difficulty, such as in Run 59, the anchors would, most probably, not have prevented an allision with the chemical tanker on the east jetty.

65. Following correspondence between DFDS and the Applicant, the Harbour Master, Humber has now confirmed that a recording of the Selin S incident last year is available. He is unwilling to share that playback with DFDS but has invited a representative to attend their offices to review the playback. DFDS remain seriously concerned about the potential that such incidents could have should the DCO be granted and are corresponding with the Harbour Master to propose attending the Applicant's offices on 26 September to view the data.

APPENDIX – EXTRACT OF DECEMBER 2021 NAVIGATIONAL SIMULATION STUDY

Project Sugar - ABP Humber -
Immingham East Development
Navigation Simulation Study Dec 2021



DJR6612-RT002-R03-00

4 August 2022

2.2 Environmental considerations

2.2.1 Bathymetry

The general bathymetry that was used in the simulation was exported from HR Wallingford's detailed 2D flow model of the river Humber. The raw bathymetric data was previously provided by ABP Humber, and verified by comparison with recent Admiralty charts and during Continuous Professional Development courses attended by the Humber Pilots.

The extent and orientation of the dredged boxes was considered as part of the design review, as described in Reference 1. There were two dredged area designs proposed and considered in the real time navigation simulation study as follows:

- A four berth option which required dredging into the intertidal area;
- A three berth solution which required minimal dredging into the intertidal area.

The depth of the dredged area was set at -9mCD on advice from ABP Humber and the side slope of the dredged areas was determined in conjunction with ABP Mer.

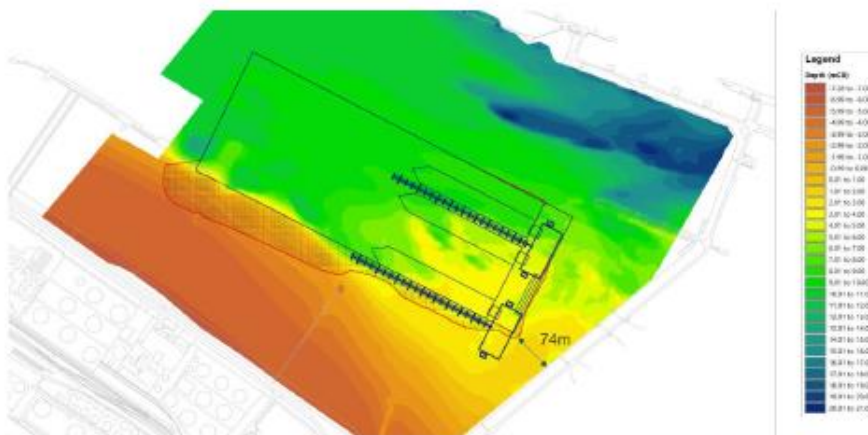


Figure 2.2: The 3 berth only solution, showing dredging required to achieve 1:5 side slopes

2.2.2 Current flows

HR Wallingford have an existing TELEMAC flow model for the River Humber and its approaches. This model was verified against an Automatic Wave and Current (AWAC) sensor deployed in the vicinity of the proposed infrastructure between November 2019 and June 2020, as follows:

- Considering the directional distribution of currents, the peak flows are aligned on 297°T and 117°T (Figure 2.3).
- HR Wallingford compared the flows recorded by the AWAC device over 2 measurement periods with output from the 2D tidal flow model, based on tidal ranges similar to mean spring (Figure 2.4 to Figure 2.7). The model results showed a good comparison to the observed values of flow speed, except around slack water, when the flows were negligible and directions highly variable. This comparison provides confidence that the predicted flows in and around the proposed infrastructure were representative of those that can be anticipated at the site.

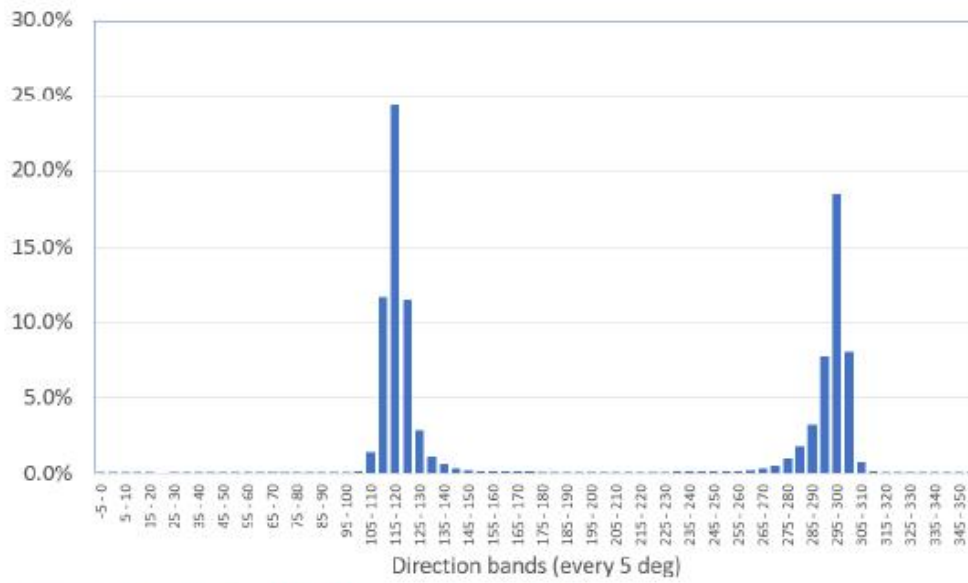


Figure 2.3: Directional distribution of currents from AWAC device

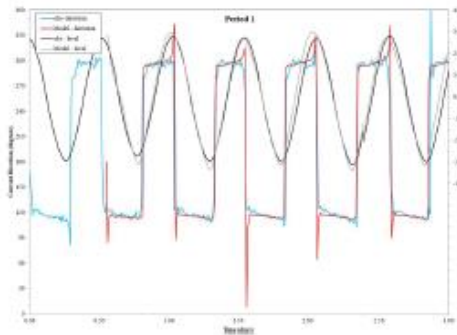


Figure 2.4: Comparison of HR Wallingford flow model direction with AWAC data flow direction

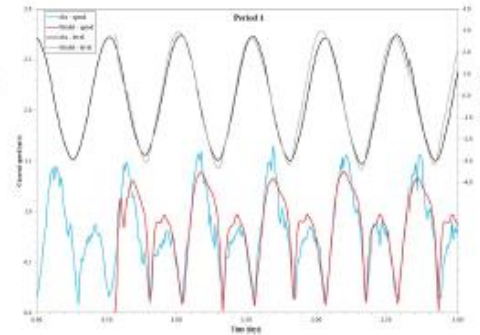


Figure 2.5: Comparison of HR Wallingford flow speed with AWAC flow speed

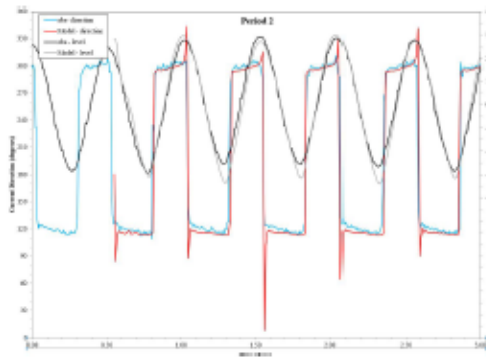


Figure 2.6: Comparison of HR Wallingford flow model direction with AWAC data flow direction

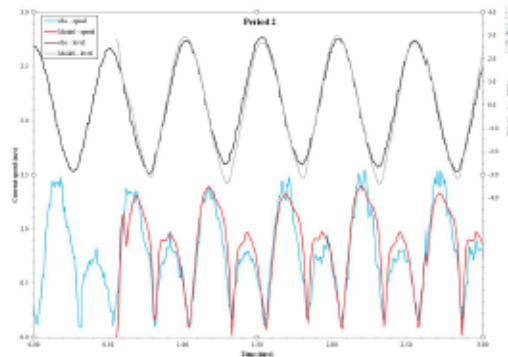


Figure 2.7: Comparison of HR Wallingford flow speed with AWAC flow speed

The bathymetry within the TELEMAC model was updated with the proposed dredged areas and their side slopes, as described in Section 2.2.1. The TELEMAC model was subsequently re-run to produce flow data which were considered representative of the currents which will be experienced after any dredging works are completed. The adjusted flows were determined for 2 cases based on MHS and a peak spring range. A total of 4 sets of flow model data were therefore available for the simulation session, as follows:

- Peak spring tide with the 4 berth layout;
- MHS tide with the 4 berth layout;
- Peak spring tide with the 3 berth layout;
- MHS tide with the 3 berth layout.

The flow model took into account disturbances in the flow due to new infrastructure, but not the effect of other vessels which might be moored on the berths.

Figure 2.8 and Figure 2.9 show the model output for the MHS ebb and flood tides for the 4 berth options and Figure 2.10 and Figure 2.11 show the model output of MHS ebb and flood for the 3 berth options.

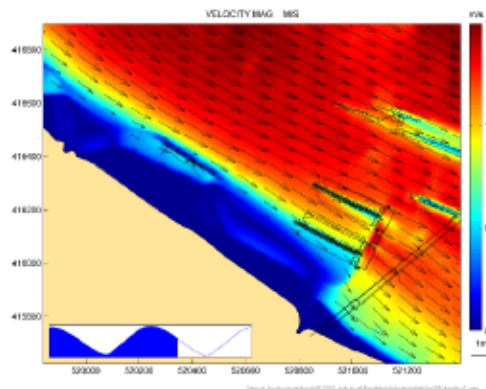


Figure 2.8: MHS ebb 4 berth option

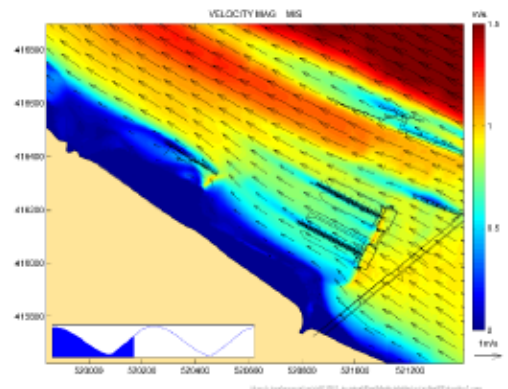


Figure 2.9: MHS flood 4 berth option

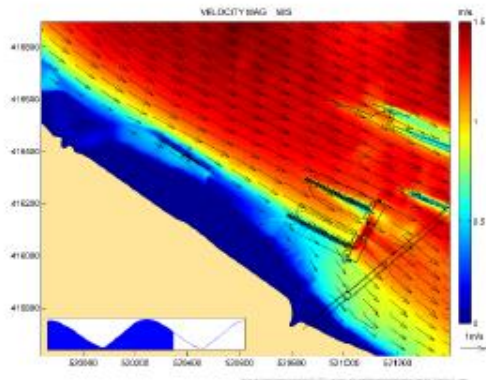


Figure 2.10: MHWS ebb 3 berth option

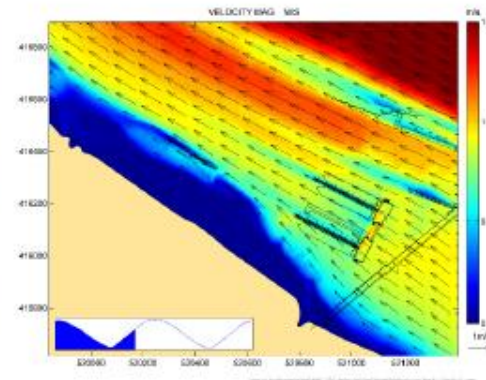


Figure 2.11: MHWS flood 3 berth option

Comparing Figure 2.8 to Figure 2.11 shows how the currents in the southern part of the new facility follow the contours of the intertidal zone, producing a set across the inner berths during the flood tide in the 3 berth option layout. The deeper dredging required for the 4 berth option allows the flows to remain more parallel to all berths.

Figure 2.8 to Figure 2.11 indicates that the strength of the tide that will affect manoeuvres at the new berths, particularly during, the swing and final approach. During a mean spring tide the ebb flow will exceed 1.5m/s (3 knots).

It was noted that in both designs, during the flood tide, the floating pontoons at the eastern end of the new infrastructure significantly shelter the dredged pocket from the prevailing current.

2.2.3 Wind

ABP Humber provided wind data collected from the Immingham Maritime Control Centre (at a height of 24m) between August 2020 and 2021. The data was analysed by HR Wallingford, as shown in Figure 2.12 and Figure 2.13.

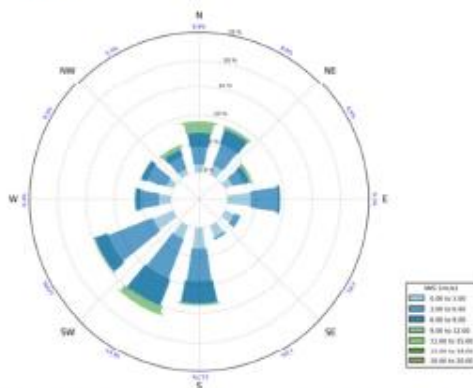


Figure 2.12: Wind rose showing distribution and strength of wind at IOH

Source: ABP/HR Wallingford

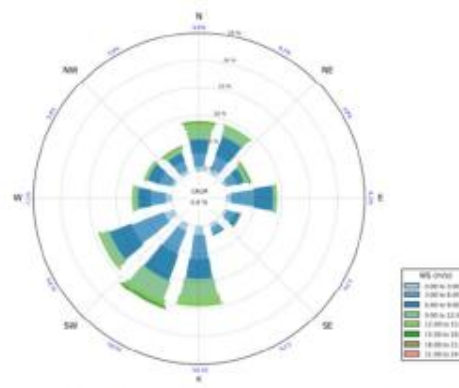


Figure 2.13: Wind rose showing distribution and strength of wind gusts at IOH

Source: ABP/HR Wallingford