

IMMINGHAM EASTERN RO-RO TERMINAL



Applicant's Issue Specific Hearing 3 Action Points for Deadline 5 – Appendix 2 - DTA
Report 23325-27 including Annexes A-C

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1.0 INTRODUCTION

1.1 David Tucker Associates (DTA) has been appointed by Associated British Ports (ABP) to act on its behalf in relation to traffic and transportation issues in respect of the proposed roll-on/ roll-off (Ro-Ro) facility within the Port of Immingham, which will be known as the Immingham Eastern Ro-Ro Terminal (IERRT).

1.2 Since ISH3, discussions have been ongoing with DFDS and CLdN in relation to terrestrial transport matters. A Statement of Common Ground is under discussion with the parties which will set out the current position and will be submitted alongside this note at Deadline 5.

1.3 The applicant has engaged extensively with the interested parties to seek to agree, at the request of the ExA, key matters relating to the Transport Assessment. There has been a total of 6 meetings with those parties and a statement of common ground was first issued to the interested parties on 19th September 2023. AP30 from ISH3 sets out the scope of items expected to be included in the SOCG and this note sets out the applicants position on the various items raised.

1.4 In addition to this and as a result of discussions with the interested parties, a number of further assessments have been sought by the Interested Parties which are addressed in this combined note.

1.5 As part of these discussions as referred to at REP4-025, and by email to the applicant on 16th October 2023, GHD on behalf of DFDS have provided further feedback on a number of the modelling parameters adopted in the junction modelling for the Transport Assessment (AS-008).

1.6 Notwithstanding the agreement with all three affected highway authorities, this note therefore provides an update to the modelling to reflect a response to those comments, which include a request to:

- Ensure all flows are in PCUs and not in vehicles and correct where necessary;
and

- Consider further alterations have been made at individual junctions where GHD have queried localised flow assignment and geometric assumptions.
- Provide confirmation of committed developments.

1.7 In addition to this, the ExA at ISH3 requested whether consideration could be given to modelling junctions on the input assumption of the average daily throughput (1,440 units) rather than the peak (1,800 units). This is provided below where appropriate.

1.8 The parameters for a further sensitivity test are under discussion and these will follow.

2.0 VALIDATION OF BASELINE SURVEYS

2.1 At Para 4.6 of REP 4-025 DFDS repeat their request for further clarification of the validation of baseline flows on the A160. This was submitted (in response to ISH3 AP29) at **REP4-009** – Appendix 6.

3.0 CAPACITY OF PORT SECURITY GATES

3.1 AP 30 of ISH3 sort, inter alia, an agreed position on the capacity of Port Security Gates. A note was prepared for discussion with the IPs (issued 11th October 2023) and comments received on 20th October 2023. The applicant's position, taking into account those comments received is as set out at **Annex A**.

4.0 EAST WEST DISTRIBUTION ASSUMPTIONS

4.1 AP 30 of ISH3 sort, inter alia, an agreed position on the assumptions underlying the East Gate / West Gate split adopted in the TA. A note was prepared for discussion with the IPs (issued 11th October 2023) and their comments are awaited. The applicants position is as set out at **Annex B**.

5.0 TRAFFIC GENERATION ISSUES

5.1 In terms of overall traffic generation of the terminal, **Table 1** sets out the HGV generation of the site on four scenarios:

- 1) The submitted Transport Assessment assumptions of 1,800 units per day, 10% solo tractor ratio and 72 / 28 split unaccompanied / accompanied trailers.
- 2) Efficient throughput flows (1,440 units per day 19% solo tractor ratio and 72 / 28 split unaccompanied / accompanied trailers)
- 3) A sensitivity test assuming 1,800 units per day, 19% solo tractor ratio and 72 / 28 split unaccompanied / accompanied trailers.
- 4) A further sensitivity test assuming 1,800 units per day and a 36 % solo tractor ratio. For the reasons set out in REP1-009, the ratio adopted in the TA is considered robust and evidence based but this scenario is presented for context as an example of the variability in flows on the peak hours.

5.2 It can be seen from the above that adopting an average flow reduces overall movements by 25%, given the overall flows reduce by 25%.

5.3 Adopting a higher solo vehicle ratio of 19% as suggested by DFDS has minimal impact on flows (increasing by 4 vehicles in the AM peak and 10 in the PM peak).

5.4 The fourth scenario has a higher increase but still relatively modest of 9 vehicles in the AM peak and 30 in the PM peak.

Immingham Eastern Ro-Ro Terminal, Port of Immingham

Modelling Update and Sensitivity Test Note

Table 1 - Traffic Generation Comparisons

Time	TA Table 8 (1,800 Units per day)			Efficient Throughput (1,440 units per day)			Sensitivity (19% solo)			Sensitivity 72% unaccompanied and 36% solo		
	In	Out	Total	In	Out	Total	In	Out	Total			
00:00	2	1	3	2	1	3	3	1	4	3	1	4
01:00	2	1	2	1	1	2	2	1	3	2	1	3
02:00	1	1	2	1	1	2	1	1	2	1	1	2
03:00	1	1	2	1	1	2	1	1	2	2	1	2
04:00	1	3	4	1	2	3	2	3	4	2	3	5
05:00	3	9	12	3	7	10	4	9	13	4	10	14
06:00	12	22	33	9	17	27	12	23	36	14	26	39
07:00	19	32	50	15	25	40	20	34	54	22	37	59
08:00	26	25	51	21	20	41	28	26	54	31	29	60
09:00	31	221	252	24	176	200	32	234	267	36	260	296
10:00	36	90	125	28	72	100	38	95	133	42	106	147
11:00	41	73	114	32	58	91	43	77	121	48	86	133
12:00	44	74	117	35	59	93	47	78	124	52	86	138
13:00	50	79	129	40	63	102	53	83	136	59	92	151
14:00	63	70	133	50	56	106	67	74	141	74	82	156
15:00	90	63	153	72	50	122	96	67	162	106	74	180
16:00	107	62	168	85	49	134	113	65	178	125	72	198
17:00	121	52	173	96	42	138	128	56	184	142	62	204
18:00	145	41	186	115	33	148	153	44	197	170	49	219
19:00	128	29	157	102	23	125	136	31	166	150	34	184
20:00	38	16	54	30	13	43	40	17	58	45	19	64
21:00	6	6	12	5	5	10	7	6	13	7	7	14
22:00	3	2	5	2	2	4	3	2	5	3	2	6
23:00	2	1	3	2	1	3	2	1	4	3	1	4

6.0 ROBUSTNESS OF TA AND IMPLICATIONS FOR SENSITIVITY TESTING

6.1 As set out in the EIA guidance, it is necessary for the applicant to test the impact of the development based on reasonably expected worse case conditions. Whilst the applicant is willing to consider further sensitivity tests requested by various IP's it is clearly unreasonable to do so on the basis of cumulative worse case positions.

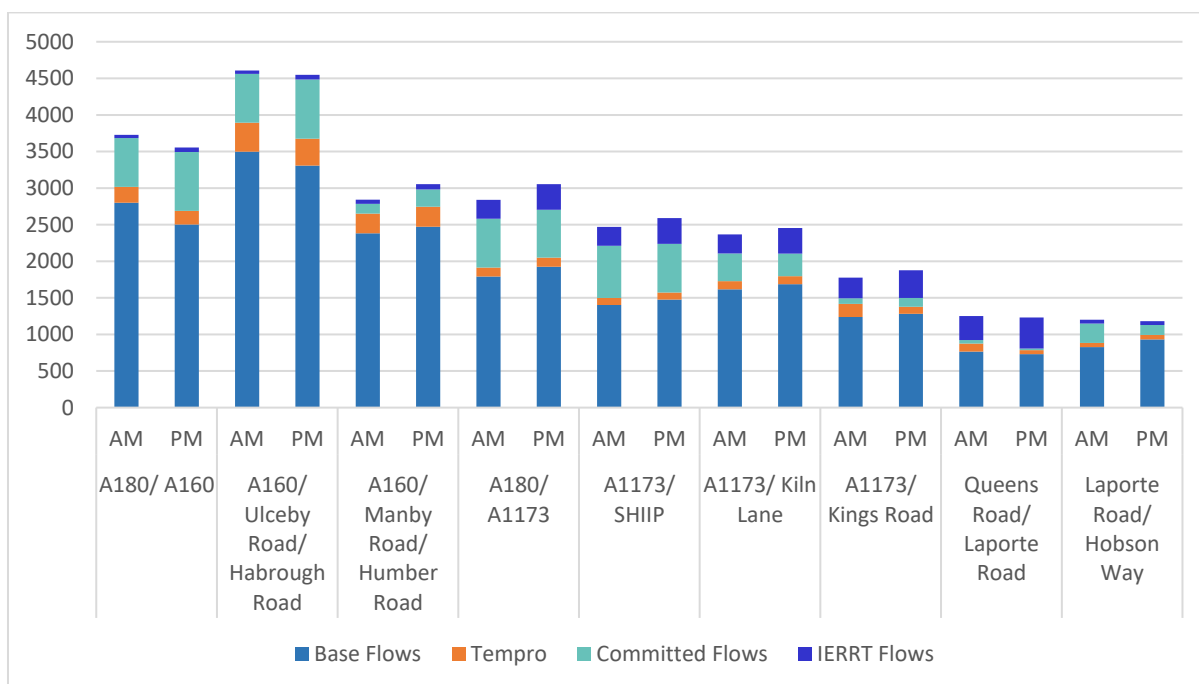
6.2 In this context it is also appropriate to consider the extent to which the Transport Assessment has taken a robust or conservative approach to traffic impact assessment. These are set out below:

- i. For the impact assessment in the TA (AS-008) as described at Para 5.4.5) adopted the higher Immingham based profile for the AM peak. This was particularly robust as it tested around 70 (175 PCUs) additional two-way HGVs higher than is expected for the end user operations.
- ii. A PCU factor of 2.3 has been adopted across the board for all HGVs. In reality some will be smaller OGV1's which would only attract a factor of 1.5.
- iii. As set out in **Table 6** of **AS-008**, shift patterns are expected to be 0600 – 1400, 1330-2130, and 2130-0600. There is, very clearly, unlikely to be any material shift change during the afternoon peaks (1600-1700) given it is one of the busiest times at the terminal. Overall that would reduce peak hour demand from that assessed by around 90 PCU movements in each peak period.
- iv. Both Tempro factors and committed developments have been added to the junction assessments – Tempro accounts for a significant level of growth in an area and therefore can be considered to include a proportion of the committed development and thus potentially double counts future traffic growth forecasts. The approach recommended by the Webtag (Section 7.3 of TAG Unit M4 is that:

“The Reference Forecast should take into account the impact of both national changes (e.g. population growth and GDP) and local changes (e.g. housing developments) on travel demand. Overall demand in the forecast should be constrained to the Department’s projections [i.e Tempro] to ensure that different schemes are being compared on consistent assumptions about total demands.

- v. This makes a very significant difference to the outcome of any assessment. Graph 1 below shows the influence of committed development assumptions on the various junctions compared with the IERRT traffic generation.

Graph 1 - Summary of Junction Flows - 2032



- vi. Furthermore the base surveys include, for example, a number of significant temporary consents for car storage and distribution on the Able Marine Energy Site. These extend to some 120 Ha.
- vii. The IERRT facility will provide a replacement for existing Stena facilities within the area (and predominantly served by the A160 Corridor). As set out in REP2-010) Stena handled a total of 123,000 units in the first six months of 2023. The traffic generation of these uses is in the baseline surveys and has not been discounted. This could reduce actual new demand on the network by 33%.
- viii. Related to this the TA is based on a peak throughput of the terminal operating every day. In practise, as confirmed at REP2-009 in response to TT1.1, the efficient throughput of the terminal is only 1,440 units per day.
- ix. The assessment assumes that the solo-tractor movements to the IERRT facility are all new on the network. In practise given the location of Killingholme and DFDS / Stena operations in Immingham, there is likely to be a large number of

empty movements between the two facilities (for example a driver picking up at Killingholme after dropping off at Immingham). The location of more facilities within the port provides opportunities for more efficient internalisation of these movements and therefore the affect is likely to be (to some degree) double counted.

- x. Analysis of data adopted in the junction modelling with longer term trends (as specifically requested by DFDS) has shown that on the day of the surveys, flows were actually around 20% higher than the prevailing average).

7.0 THRESHOLD FOR CONSIDERING MITIGATION

7.1 DFDS suggested at ISH3 that current forecast of development impact would lead to the need for physical mitigation. The policy reference they mentioned has not been confirmed but in any event the appropriate policy tests are:

- NPSfP Para 5.4.22.
- The NPPF Para 110 / 111.

7.2 In terms of the NPSfP there is a requirement for the consideration of management of such facilities but there is no specific policy test that requires consideration of highway capacity mitigation measures.

7.3 The impact of the scheme and need for physical mitigation should be considered against the NPPF Para 110 / 111.

In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- a. Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- b. Safe and suitable access to the site can be achieved for all users; and
- c. the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and
- d. Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

Para 110

- 7.4 Paragraph 111 establishes that there are very limited circumstances where development can be refused on highways grounds as reflected in the threshold that the residual cumulative impact must be severe. This is a high bar.

Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

Para 111

- 7.5 On that basis the test is whether there are significant impacts on the transport network which need mitigation. Clearly in this case even if there were junctions operating over capacity then mitigation would only be justified if the impact without them was severe as a direct result of the proposed development.
- 7.6 The way that the test of Severity should be applied was considered in detail in Hawkhurst Parish Council v Tunbridge Wells DC [2020] EWHC 3019. The most pertinent conclusion of that judgment is set out in Para 138 where it is confirmed that:

"In my judgment, paragraph 109 [Note now 111] of the NPPF necessarily requires consideration of whether the residual cumulative impact of the proposed development is severe, not simply whether existing or projected congestion without that development would be severe."

- 7.7 On that basis it is the change that arises from the development that must be found 'severe'. Severe is defined in the OED as meaning 'very great'. In all reasonable terms, the interpretation of its use in Policy is that it sets a very high bar or hurdle. Traffic impact issues should in other words not prevent the deliverability of otherwise sustainable and appropriate development unless there are very significant and exceptional impacts arising.
- 7.8 The following assessments should be considered against that policy background.

8.0 COMMITTED DEVELOPMENT

- 8.1 The applicant's response to the issue of committed development is provided at REP4-008 (in response to ExAQ2 TT2.02).
- 8.2 In further discussions, DFDS have asked for confirmation that on site "Altalto" was included in the assessment. It has been confirmed that it is but in the TA it is named "Velocity's". both fall under the same reference number (DM/0664/19/FUL).
- 8.3 DFDS have also asked for confirmation of the breakdown of committed development flows for these junctions. These have been reviewed following discussions with DFDS and final versions attached in **Annex D** as extracted from the Transport Assessments for those applications. In some cases, the TA refers to a morning peak of 0800-0900 and an evening peak of 1700-1800 and therefore, with reference to the core data provided in the TA these have been converted to flows for the peak hours tested in the TA – which are -0700-0800 and 1600-1700.

9.0 UPDATED MODELLING RESULTS

- 9.1 The modelling takes into account the issues raised by DFDS in their submission following ISH3 (REP4-025) and further comments received on 16th October 2023. The majority of comments received on the 16th October 2023 relate to comments that should have properly been provided at the Written Representation stage of the examination as they relate to modelling assumptions made in the original TA. They have nonetheless been responded to comprehensively and a summary of those responses provided at **Annex C**.
- 9.2 On the basis of the above, the modelling as set out in TA has been updated and is discussed in **Annex D**.
- 9.3 The results of the revised modelling supports and confirms the conclusions of the original Transport Assessment. There are some junctions which are operating closer to capacity than originally forecast. The significant proportion of the reduction in capacity is related to committed development traffic rather than the development itself.

In any event queuing is manageable and delay dissipates quickly after the central ~15% uplift central time period.

9.4 In all cases, the level of traffic generated by the proposed IERRT development results in no material change in operation between the 2032 scenario without the development to the 2032 scenario with the development. The development therefore clearly has no material change on the operation of the junction.

9.5 On that basis there is no justification for mitigation arising from the proposed development.

10.0 INTERNAL JUNCTION MODELLING

10.1 In response to queries raised by DFDS in respect of PCU conversion factors, the internal junction models have been updated. These are presented in **Annex E**.

10.2 For robustness and pending agreement on the matter in the SOCG (which is not available at the time of writing) these assessments assume a solo tractor ratio of **40%**.

10.3 The overall conclusions and result of the findings of Annex M of the TA (AS-008) remain unchanged.

Annex A

Note on Security Gate Capacity

1.0 INTRODUCTION

- 1.1 David Tucker Associates (DTA) has been appointed by Associated British Ports (ABP) to act on its behalf in relation to traffic and transportation issues in respect of the proposed roll-on/ roll-off (Ro-Ro) facility within the Port of Immingham, which will be known as the Immingham Eastern Ro-Ro Terminal (IERRT).
- 1.2 This note sets out the position in terms of Security Gate Capacity and the implications arising from the proposed IERRT development.
- 1.3 At times, queuing occurs at the security gates into the port. This is as a consequence of a fundamental (and unavoidable) requirement for ABP security to stop and register vehicles as they enter the port at the East and West Gate. Queuing at the gate is generally limited and has no impact on wider uses of the public highway.
- 1.4 The policy test at NPPF Para 111 confirms that development should only be prevented when the highway safety impact is unacceptable or residual cumulative impacts (in respect of congestion or capacity) are severe.

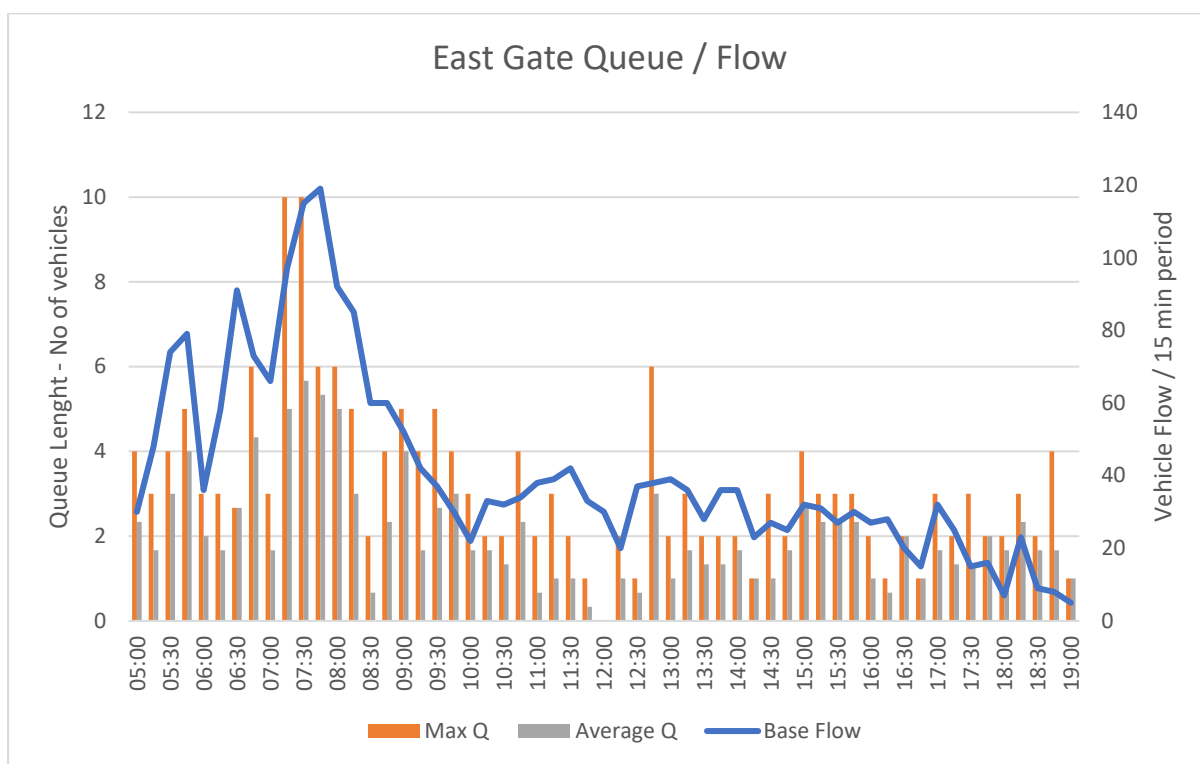
2.0 Existing Surveys of Security Gates

- 2.1 Traffic Counts have been undertaken by the applicant to establish queue lengths at both West and East Gates. These were undertaken on 6th June 2023 and are included at **Appendix A**. The surveys show the queues manually observed at the gatehouses. The queuing length recorded represents the maximum observed queue at each 5-minute interval.
- 2.2 Data has also been provided by DFDS in REP2-052. This survey was undertaken on 15th June 2022. Overall inbound flow data for the DFDS survey are comparable with the applicants survey.
- 2.3 REP2-052 confirms that "This showed that, on average, HGVs processing time is 30 seconds with 20 seconds for LGVs."

2.4 GHD have been unable to provide the raw data behind these surveys so they cannot be checked but the broad conclusions are consistent with the applicants own observations and the data provided at **Appendix A**.

2.5 **Figure 1** below summarise the data in terms of inbound movements per 15-minute period and maximum observed queues for East Gate derived from the data provided at **Appendix A**.

Figure 1 – Summary of East Gate Survey



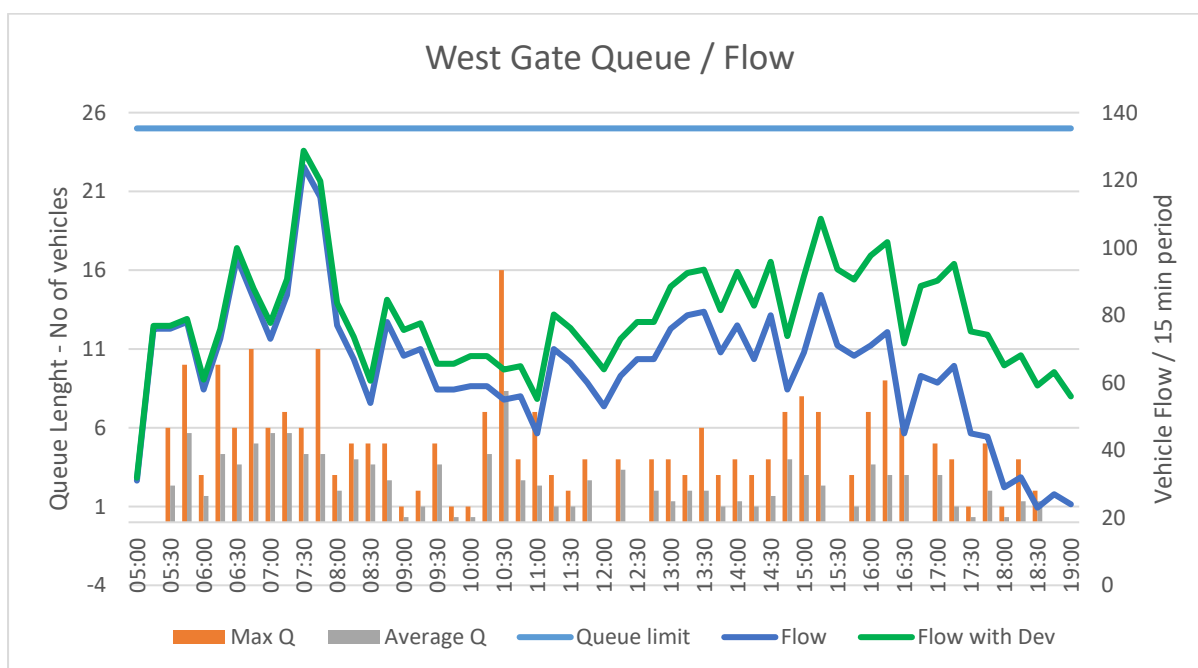
2.6 It can be seen from the survey that, with the exception of some outliers, queue lengths generally correlated well with overall inbound flows. At present queuing at the gate is typically around 1 – 3 vehicles, with an average in any 5-minute period of 2 vehicles. At peak times (which is typically the morning period between 07:00 and 09:00 queues extended to around 10 vehicles but only for a short period of time. This is generally the time when peak movements occur because of inbound staff movements to the various operations on the port.

2.7 REP2-052 Figure 3 shows a queue of around 5 vehicles at East Gate at 07:10am. Again, this broadly correlates with the results in the applicants survey.

2.8 Whilst these queues will occasionally extend back past the right turn lane providing access to Laporte Road, the overall level of traffic on Queens Road which is not accessing the port (and therefore turning right into Laporte Road) is very low.

2.9 **Figure 2** shows the same data for West Gate again derived from the data at **Appendix A**. The Figure also shows the maximum queue length of 25 HGVs as defined below.

Figure 2 – Summary of West Gate Survey



2.10 The survey at West Gate shows a similar pattern. Total vehicle flow (of upto 120 vehicles (over a 15-minute period)) are consistent with East Gate but result in higher queues generally as a result of higher levels of HGVS (around 60% of all vehicles at West Gate vs around 10 – 15% at East Gate).

2.11 There was one outlier event at 10:30 when a maximum queue of 16 vehicles was recorded). This quickly dispersed (to 8 vehicles in the following five minutes and then to 4 in the next 5-minute period.

- 2.12 REP2-052 also noted (Para 2.1) in relation to West Gate that “the queues occasionally back up to the Humber Road Junction as shown in Figure 1. It is worth noting that those occurrences are infrequent, and queues generally dispersed in two to four minutes.”
- 2.13 In practise although presented as “queues” in this assessment the majority of these incidents are more akin to slow moving lines of traffic rather than stationary queues one might experience at a red light, for example.

3.0 Implications of IERRT

- 3.1 As can be seen from the above the gates are currently operating within their practical capacity. Whilst some queuing inevitably occurs this is generally at times of peak inbound demand which for the port is generally across the morning peak period. In all time periods surveyed, any queueing which does occur dissipates within a few minutes and there are no prolonged periods of extensive queuing. For context **Figures 3 and 4** show the increase in HGVs using each gate on the robust assumption that 100% of all inbound traffic users each gate.

Figure 3 – East Gate Queues with IERRT HGVS (100%)

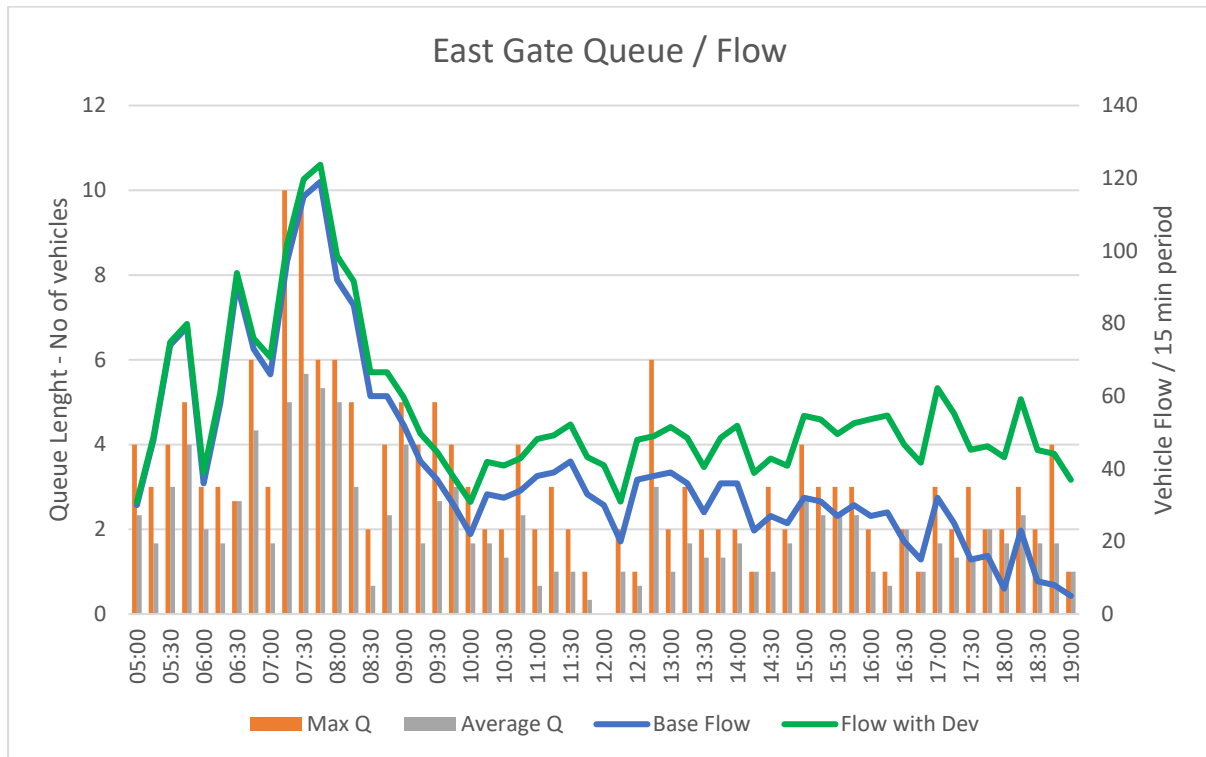
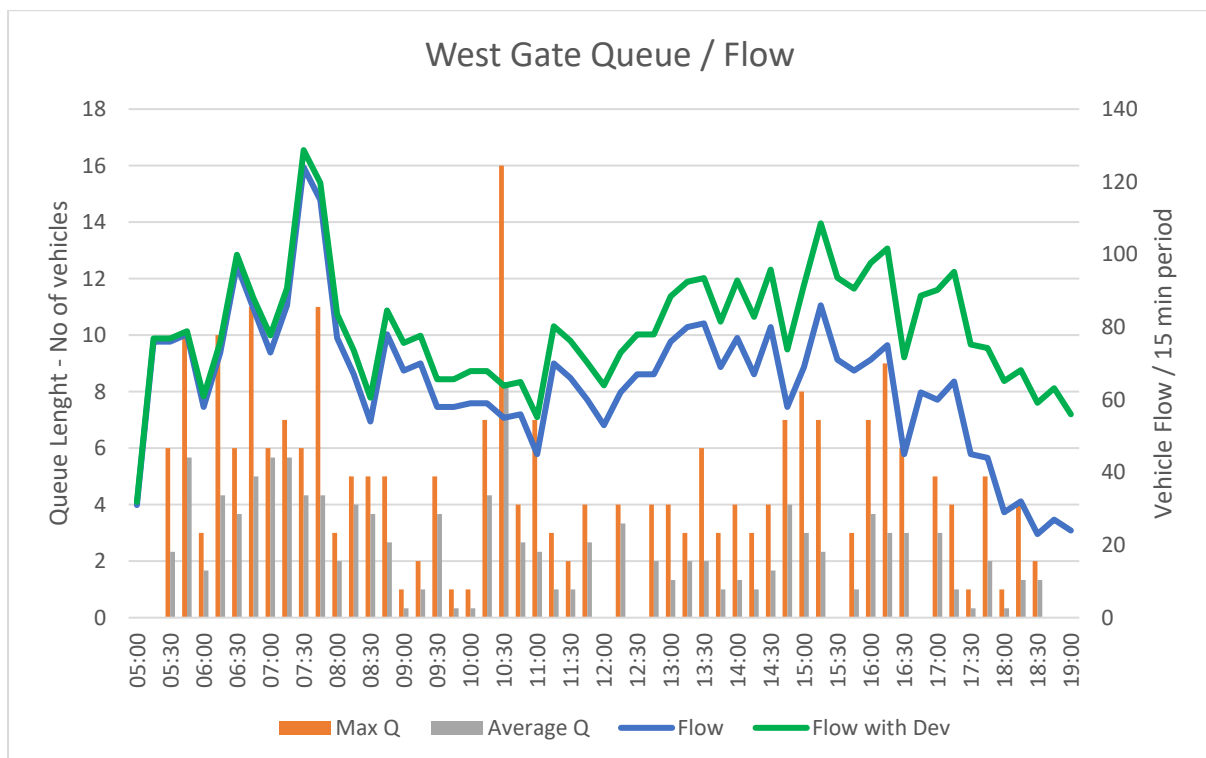


Figure 4 – West Gate Ques with IERRT HGVS (100%)



3.2 It can be seen from the above that the peak inbound demand from IEERT is generally in the afternoon period when peak demand will remain well below that experienced in the morning periods.

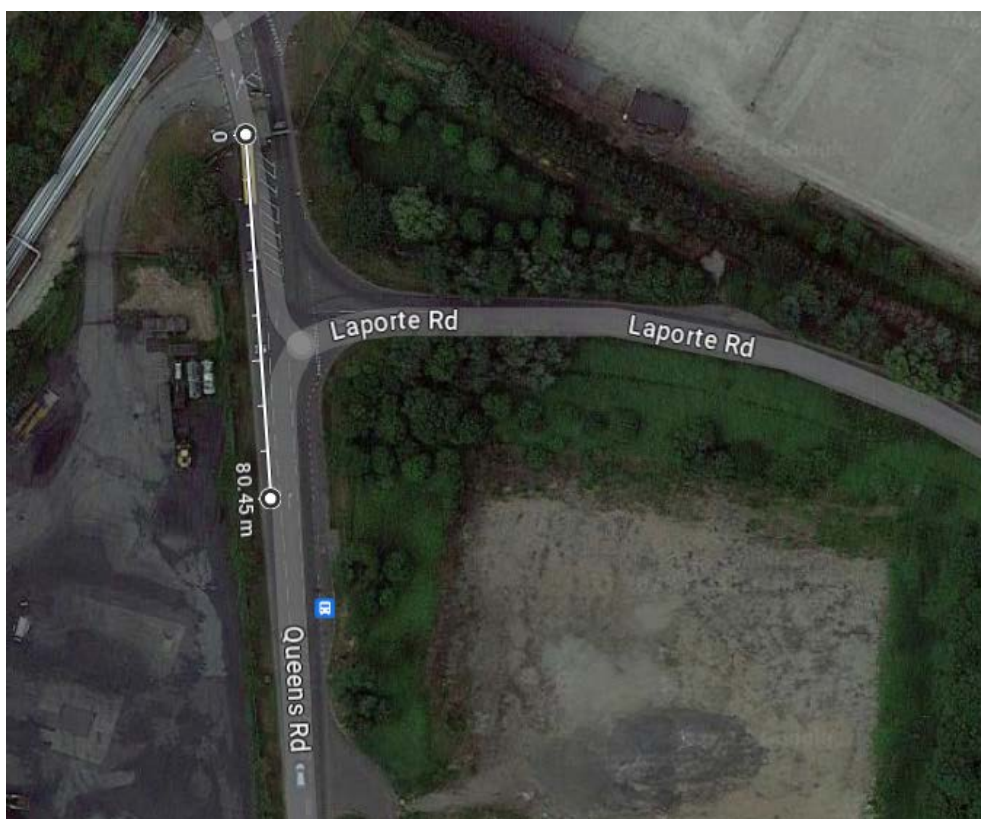
4.0 Capacity of East Gate

4.1 At present there is space for around 80m of queuing (broadly) at East Gate before the queue interrupts the ability for vehicles to turn right onto Laporte Road as shown below in **Figure 5**.

4.2 The survey of existing movements at Laporte Road / Queens Road (Page 1426 of AS-008 - Transport Assessment) confirms during the peak inbound hours for IERTT (across the afternoon) hourly movements of less than 30 vehicles per hour undertake this movement. Right turning movements from Laporte Road into East Gate are higher (around 60 movements per hour) and this leads to occasional short-term queuing (around 8 incidents per day as shown on Page 1427 of AS-008) – likely a direct result of the queue caused by the security gate.

4.3 There is no record of any personal injury accidents at this location in the last five years. and therefore, the situation is operating safely at present.

Figure 5 – Google Earth Image – East Gate / Laporte Road Junction



- 4.4 Based on the assumption of 100% of IERRT HGVs using East Gate, changes in flows would be most marked from around 11am. The flow rate varies as shown on Figure 3 but would average at around 50 vehicles per 15 mins and the ratio of HGVs will increase around 60% (i.e., similar to that experienced at West Gate). The proportion of HGVs routing from Laporte Road to Queens Road / East Gate would be broadly unchanged.
- 4.5 For a single gate, those levels of flows at West Gate result in queues of around 6 – 8 vehicles and average queues of around 4 vehicles. It can therefore be assumed that a similar level of queuing would occur at East Gate with the introduction of IERRT. This would be similar to peak queuing experienced at present in the morning peaks but would extend the period of which queuing is experienced.
- 4.6 The proposed improvement scheme will increase both throughout capacity (because it will double the available security checkpoints) and queuing capacity.

- 4.7 In terms of capacity, the peak queue of 8 vehicles (for one gate) would therefore be reduced to 4 vehicles and the average from 4 to 2 vehicles.
- 4.8 The scheme will provide for two lanes. The nearside lane will allow for upto 80m of queuing (broadly 4 HGVs) before the vehicles block movements to Laporte Road and the offside lane will provide for around 50m (broadly 2 HGVs and a car).
- 4.9 The layout will therefore fully mitigate any impact of all HGVs using the East Gate Access for IERRT and will improve the situation in terms of any existing propensity for queues to extend up to the Laporte Road access.

5.0 Capacity of West Gate

- 5.1 At present West Gate has a long approach (Humber Road) from the public highway. There is approximately 450m of space on Humber Road to accommodate queuing before the queue interrupts access to movements from Rosper Road to A160, as can be seen in **Figure 6**. This equates broadly to 25 HGVs.

Figure 6 - Queuing Length on Approach to West Gate

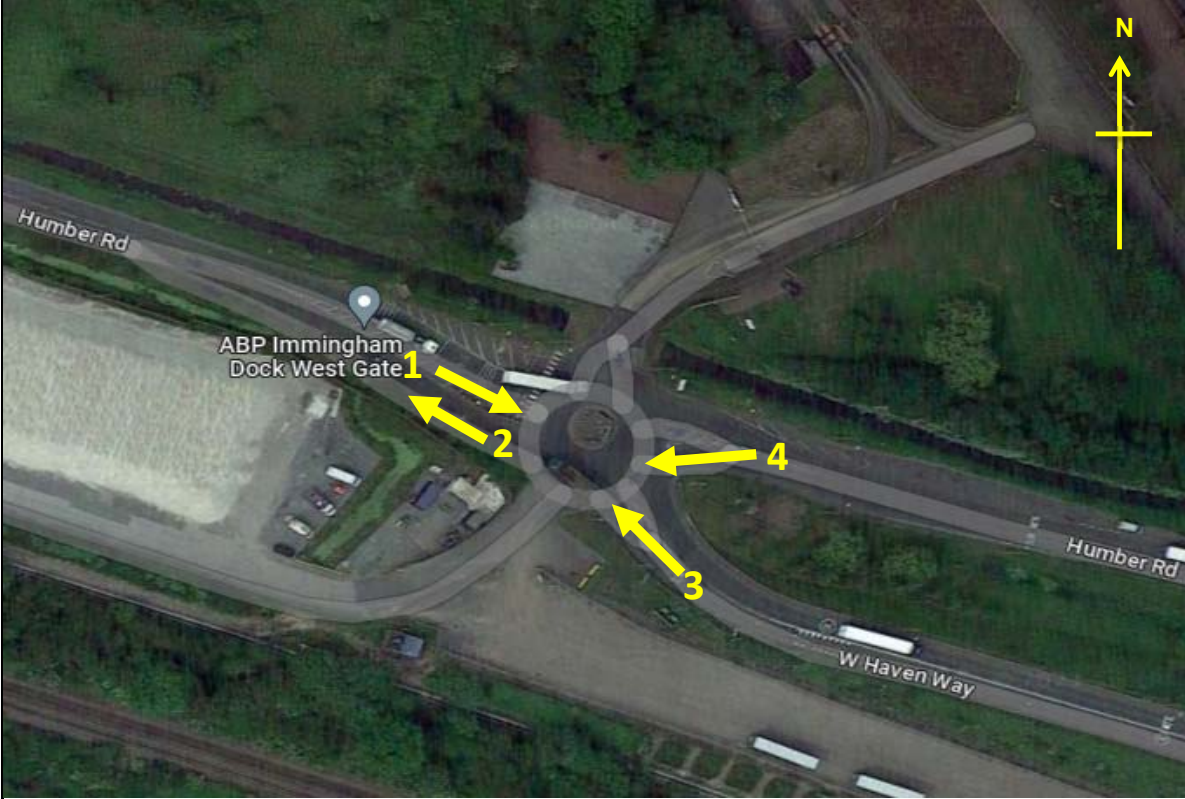


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- 5.2 These is no record of any personal injury accidents at this location in the last five years. and therefore, the situation is operating safely at present.
- 5.3 Based on **Figure 4**, and on the very robust assumption that 100% of inbound HGVs would use West Gate the overall profile of flows would flatten to the point that afternoon inbound flows would be similar to those experienced in the morning peak periods. On that basis it can be expected that the average queues of 5 – 6 vehicles and peak queues 10 – 11 vehicles in the morning period (05:30 – 09:00) will also be experienced in the afternoon period (from say 13:00 – 18:00).
- 5.4 This remains well within capacity of the road network and the capacity of West Gate is not materially affected by route choice of inbound HGV movements to the IERRT terminal. In practise, the applicants position is that only 15% of traffic will use West Gate and therefore the change in flows are minimal to the level that they will have no material impact on queuing in any event.

Appendix A

Queue Surveys

SITE: <p style="text-align: center;">1</p>		DATE: <p style="text-align: center;">06/06/2023</p>
LOCATION: <p style="text-align: center;">HUMBER ROAD</p>		DAY: <p style="text-align: center;">TUESDAY</p>



JOB TITLE: <p style="text-align: center;">IMMINGHAM DOCKS</p>		JOB NUMBER: <p style="text-align: center;">12384</p>
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QUEUE LENGTHS

JOB REF: 12384



JOB NAME: IMMINGHAM DOCKS

SITE: 1

DATE: 06/06/2023

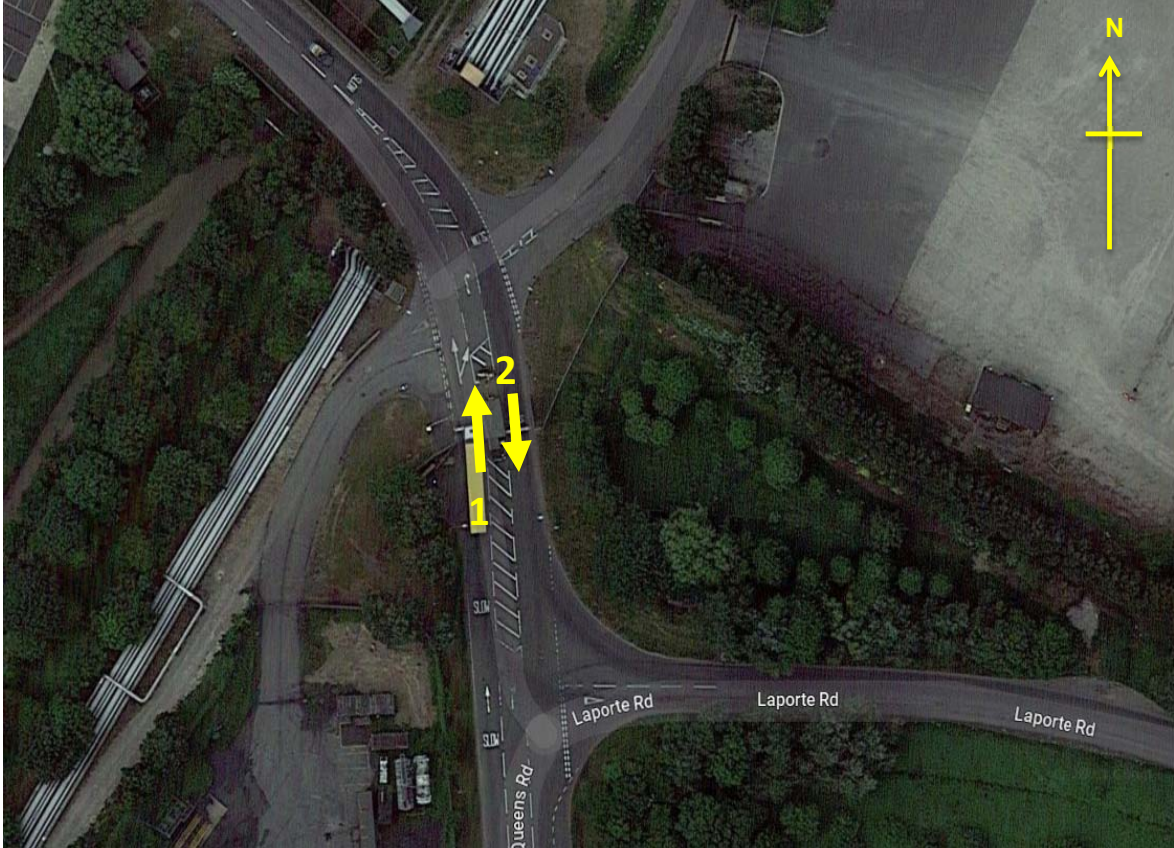
LOCATION: HUMBER ROAD / W HAVEN WAY

DAY: TUESDAY

NOTE: Queue Lengths recorded by the number of vehicles queuing at each 5-minute interval, by lane

TIME	HUMBER ROAD LANE 1	HUMBER ROAD LANE 2	W HAVEN WAY LANE 3	HUMBER ROAD LANE 4	TIME	HUMBER ROAD LANE 1	HUMBER ROAD LANE 2	W HAVEN WAY LANE 3	HUMBER ROAD LANE 4	TIME	HUMBER ROAD LANE 1	HUMBER ROAD LANE 2	W HAVEN WAY LANE 3	HUMBER ROAD LANE 4	TIME	HUMBER ROAD LANE 1	HUMBER ROAD LANE 2	W HAVEN WAY LANE 3	HUMBER ROAD LANE 4
05:00	0	0	0	0	09:00	0	0	0	1	13:00	0	0	2	1	17:00	5	0	0	3
05:05	0	0	0	0	09:05	0	0	1	1	13:05	4	0	0	1	17:05	0	0	5	3
05:10	0	0	0	1	09:10	1	0	3	0	13:10	0	0	1	2	17:10	4	0	0	3
05:15	0	0	0	0	09:15	2	0	0	1	13:15	3	0	1	0	17:15	0	0	2	3
05:20	0	0	0	0	09:20	0	0	0	0	13:20	3	0	1	0	17:20	0	0	1	4
05:25	0	0	0	1	09:25	1	0	2	0	13:25	0	0	0	1	17:25	0	0	0	2
05:30	1	0	0	0	09:30	5	0	2	1	13:30	0	0	0	1	17:30	0	0	0	0
05:35	0	0	0	0	09:35	4	0	0	1	13:35	0	0	0	0	17:35	1	0	2	1
05:40	6	0	0	1	09:40	6	0	1	0	13:40	6	0	0	1	17:40	0	0	0	0
05:45	6	0	0	1	09:45	0	0	0	1	13:45	0	0	1	1	17:45	5	0	0	0
05:50	1	0	0	0	09:50	1	0	0	3	13:50	3	0	3	1	17:50	0	0	0	0
05:55	10	0	0	1	09:55	0	0	0	0	13:55	0	0	0	1	17:55	1	0	2	1
06:00	0	0	1	1	10:00	1	0	0	0	14:00	4	0	0	2	18:00	1	0	0	0
06:05	3	0	0	0	10:05	0	0	3	3	14:05	0	0	0	1	18:05	0	0	0	3
06:10	2	0	1	0	10:10	0	0	0	1	14:10	0	0	2	2	18:10	0	0	2	1
06:15	10	0	1	0	10:15	3	0	1	0	14:15	0	0	5	2	18:15	0	0	0	1
06:20	3	0	2	0	10:20	7	0	0	1	14:20	0	0	3	0	18:20	4	0	0	0
06:25	0	0	0	1	10:25	3	0	4	2	14:25	3	0	1	1	18:25	0	0	0	0
06:30	6	0	2	1	10:30	1	0	0	1	14:30	1	0	1	2	18:30	2	0	0	0
06:35	0	0	2	1	10:35	16	0	0	1	14:35	4	0	0	1	18:35	2	0	0	0
06:40	5	0	2	2	10:40	8	0	0	1	14:40	0	0	1	1	18:40	0	0	0	0
06:45	11	0	0	1	10:45	4	0	3	1	14:45	5	0	0	0	18:45	0	0	0	1
06:50	3	0	1	2	10:50	2	3	0	0	14:50	7	0	2	0	18:50	0	4	0	0
06:55	1	0	0	2	10:55	2	0	2	1	14:55	0	0	2	2	18:55	0	0	0	0
07:00	6	0	2	1	11:00	0	0	0	0	15:00	1	0	4	1	19:00	0	0	0	0
07:05	6	0	0	1	11:05	0	0	3	0	15:05	0	0	1	1	19:05	0	0	0	0
07:10	5	0	0	1	11:10	7	0	1	0	15:10	8	0	0	2	19:10	0	0	0	0
07:15	6	0	1	0	11:15	0	0	1	1	15:15	7	0	0	3	19:15	0	0	1	1
07:20	4	0	0	0	11:20	3	0	1	2	15:20	0	0	1	3	19:20	0	0	0	0
07:25	7	0	1	0	11:25	0	0	1	1	15:25	0	0	2	3	19:25	0	0	0	0
07:30	4	0	0	0	11:30	2	0	0	1	15:30	0	0	0	1	19:30	0	0	0	0
07:35	6	0	2	1	11:35	0	0	0	1	15:35	0	0	1	2	19:35	0	0	0	0
07:40	3	0	2	3	11:40	0	0	1	0	15:40	0	0	1	2	19:40	0	0	0	0
07:45	0	0	1	2	11:45	0	0	1	0	15:45	0	0	4	2	19:45	1	0	0	0
07:50	11	0	2	2	11:50	4	0	1	0	15:50	0	0	1	3	19:50	0	0	0	0
07:55	2	0	0	0	11:55	1	0	0	0	15:55	3	0	3	2	19:55	0	0	1	0
08:00	3	0	1	0	12:00	0	0	0	0	16:00	7	0	3	4					
08:05	0	0	2	1	12:05	0	0	0	1	16:05	0	0	0	0					
08:10	3	0	0	0	12:10	0	0	1	1	16:10	4	0	5	0					
08:15	2	0	1	0	12:15	4	0	6	0	16:15	9	0	1	1					
08:20	5	0	1	1	12:20	3	0	0	1	16:20	0	0	0	1					
08:25	5	0	1	0	12:25	3	0	1	1	16:25	0	0	0	3					
08:30	3	0	1	0	12:30	0	0	1	1	16:30	6	0	0	1					
08:35	3	0	1	0	12:35	0	0	3	0	16:35	3	0	0	1					
08:40	5	0	0	0	12:40	0	0	0	0	16:40	0	0	1	1					
08:45	3	0	0	2	12:45	0	0	0	0	16:45	0	0	1	3					
08:50	5	0	0	1	12:50	2	0	1	1	16:50	0	0	1	0					
08:55	0	0	1	1	12:55	4	0	4	1	16:55	0	0	0	0					

SITE: <p style="text-align: center;">4</p>		DATE: <p style="text-align: center;">06/06/2023</p>
LOCATION: <p style="text-align: center;">QUEENS ROAD</p>		DAY: <p style="text-align: center;">TUESDAY</p>



JOB TITLE:
IMMINGHAM DOCKS

JOB NUMBER:
12384

QUEUE LENGTHS

JOB REF: 12384



JOB NAME: IMMINGHAM DOCKS

SITE: 4

DATE: 06/06/2023

LOCATION: QUEENS ROAD

DAY: TUESDAY

NOTE: Queue Lengths recorded by the number of vehicles queuing at each 5-minute interval, by lane

TIME	QUEENS ROAD		TIME	QUEENS ROAD		TIME	QUEENS ROAD		TIME	QUEENS ROAD	
	LANE 1	LANE 2		LANE 1	LANE 2		LANE 1	LANE 2		LANE 1	LANE 2
05:00	2	0	09:00	2	0	13:00	1	0	17:00	3	0
05:05	1	0	09:05	5	0	13:05	2	0	17:05	0	0
05:10	4	0	09:10	5	0	13:10	0	0	17:10	2	0
05:15	0	0	09:15	4	0	13:15	0	0	17:15	1	0
05:20	3	0	09:20	1	0	13:20	2	0	17:20	1	0
05:25	2	0	09:25	0	0	13:25	3	0	17:25	2	0
05:30	2	0	09:30	1	0	13:30	1	0	17:30	1	0
05:35	3	0	09:35	2	0	13:35	2	0	17:35	0	0
05:40	4	0	09:40	5	0	13:40	1	0	17:40	3	0
05:45	3	0	09:45	3	0	13:45	1	0	17:45	2	0
05:50	5	0	09:50	2	0	13:50	1	0	17:50	2	0
05:55	4	0	09:55	4	0	13:55	2	0	17:55	2	0
06:00	2	0	10:00	1	0	14:00	1	0	18:00	1	0
06:05	1	0	10:05	3	0	14:05	2	0	18:05	2	0
06:10	3	0	10:10	1	0	14:10	2	0	18:10	2	0
06:15	1	0	10:15	2	0	14:15	1	0	18:15	2	0
06:20	1	0	10:20	1	0	14:20	1	0	18:20	3	0
06:25	3	0	10:25	2	0	14:25	1	0	18:25	2	1
06:30	1	0	10:30	0	0	14:30	0	0	18:30	2	0
06:35	3	0	10:35	2	0	14:35	3	0	18:35	2	0
06:40	4	0	10:40	2	0	14:40	0	0	18:40	1	0
06:45	6	0	10:45	2	0	14:45	2	0	18:45	1	0
06:50	3	0	10:50	4	0	14:50	1	0	18:50	4	0
06:55	4	0	10:55	1	0	14:55	2	0	18:55	0	0
07:00	0	0	11:00	0	0	15:00	4	0	19:00	1	0
07:05	2	0	11:05	0	0	15:05	1	0	19:05	1	0
07:10	3	0	11:10	2	0	15:10	3	0	19:10	1	0
07:15	1	0	11:15	3	0	15:15	1	0	19:15	0	0
07:20	10	0	11:20	0	0	15:20	3	0	19:20	2	0
07:25	4	0	11:25	0	0	15:25	3	0	19:25	2	0
07:30	10	0	11:30	0	0	15:30	3	0	19:30	1	0
07:35	2	0	11:35	1	0	15:35	1	0	19:35	1	0
07:40	5	0	11:40	2	0	15:40	3	0	19:40	3	0
07:45	5	0	11:45	1	0	15:45	3	0	19:45	1	0
07:50	6	0	11:50	0	0	15:50	2	0	19:50	0	0
07:55	5	0	11:55	0	0	15:55	2	0	19:55	1	0
08:00	6	0	12:00	0	0	16:00	2	0			
08:05	5	0	12:05	0	0	16:05	0	0			
08:10	4	0	12:10	0	0	16:10	1	0			
08:15	5	0	12:15	2	0	16:15	1	0			
08:20	3	0	12:20	1	0	16:20	0	0			
08:25	1	0	12:25	0	0	16:25	1	0			
08:30	2	0	12:30	1	0	16:30	2	0			
08:35	0	0	12:35	1	0	16:35	2	0			
08:40	0	0	12:40	0	0	16:40	2	0			
08:45	4	0	12:45	1	0	16:45	1	0			
08:50	1	0	12:50	6	0	16:50	1	0			
08:55	2	0	12:55	2	0	16:55	1	0			

Annex B

Note on East / West Gate Usage

1.0 INTRODUCTION

1.1 David Tucker Associates (DTA) has been appointed by Associated British Ports (ABP) to act on its behalf in relation to traffic and transportation issues in respect of the proposed roll-on/ roll-off (Ro-Ro) facility within the Port of Immingham, which will be known as the Immingham Eastern Ro-Ro Terminal (IERRT).

1.2 This note sets out the position in relation to the distribution of HGV movements through East and West Gate. The Transport Assessment [AS-008] has, as a base case a forecast distribution of 15% of HGVs using West Gate and 85% using East Gate. This is considered robust because:

- i. It is the quickest and most logical route for all traffic as shown at **REP2-010 Page 16**. Routing through the port is more tortuous and involves links with 20mph speed limits and multiple junctions. The route via West Gate through the port requires routing through 8 junctions (four of which are on port and four of which are on public highway). In contrast, the route via East Gate in contrast requires routing through four junctions (on the public highway) only.
- ii. There are some facilities on the A160 which might attract localise traffic. DFDS consider that due to the prevalence of facilities along the A160 this will encourage traffic to use West Gate. At present DFDS estimate around 110,000 units (out of 720,000) direct to off-site facilities on the A160 Corridor. This is around 15% of their demand. If the same proportion were applied to IERRT Traffic that would support the assumption made in the Transport Assessment that 15% of traffic would use West Gate. In any event as shown on REP2-009 page 93 and Appendix 4 there are as many facilities located from East Gate as West Gate – this is discussed further below.
- iii. This also overlaps with discussion on wayfinding. The applicant considers (as set out at Page 17 /18 of REP2-010) that there are adequate measures in place to ensure correct wayfinding information is given to drivers to direct them to East Gate.

- iv. For outbound traffic movements, signage will be provided to direct all drivers leaving the site to East Gate as part of the IERRT development.
- v. In tandem with this, however, there are opportunities to introduce operational management measures with drivers. As noted in the Applicant's responses to the ExA's questions [TT 1.2c] (Application Document Reference 10.2.21) all Stena Line customers (in common with most Ro-Ro operators) are pre-booked. Details of routing can be provided with booking confirmation (normally email) and supported by the Stena Line App which can provide routing directions. Outbound from the facility the scheme will provide signage within the port to direct all HGVs to East Gate.
- vi. As described in the TA [AS-008] at paragraph 7.4.6, ABP are in discussions with National Highways and NELC with a view to upgrading wayfinding to and from the port generally – which it should be noted is not being taken forward as part of the Immingham Eastern Ro-Ro DCO application.

2.0 Implications for movements to / from Local Industrial Facilities

- 2.1 DFDS argue that there are existing facilities on the A160 which will attract demand from the site and hence encourage drivers to use West Gate.
- 2.2 As set out above at present DFDS estimate around 110,000 units (out of 720,000) direct to off-site facilities on the A160 Corridor. This is around 15% of their demand and thus in principle supports the TA assumptions.
- 2.3 A further review of relevant facilities in the area has been undertaken. Typically, industrial areas in the vicinity of Immingham are a mix of petro-chemical facilities and other general warehousing / open storage and HGV parking areas. Some of these are privately operated and some specifically for end users (for example DFDS).
- 2.4 Clearly each individual unit has different operations, some are maintenance related, some open storage and others warehousing. Therefore, to provide an assessment of the potential attraction of these a gravity model based on total site area has been

adopted. The principal sites and their approximate areas (based on Google Earth) are provided in **Table 1** below and shown at **Appendix A**. The two principal areas are Kiln Lane industrial estate and North Killingholme Industrial Estate. On the basis of an area to distance deterrence ratio to the power of -1, the split of demand through East and West Gate is 84% to 16%.

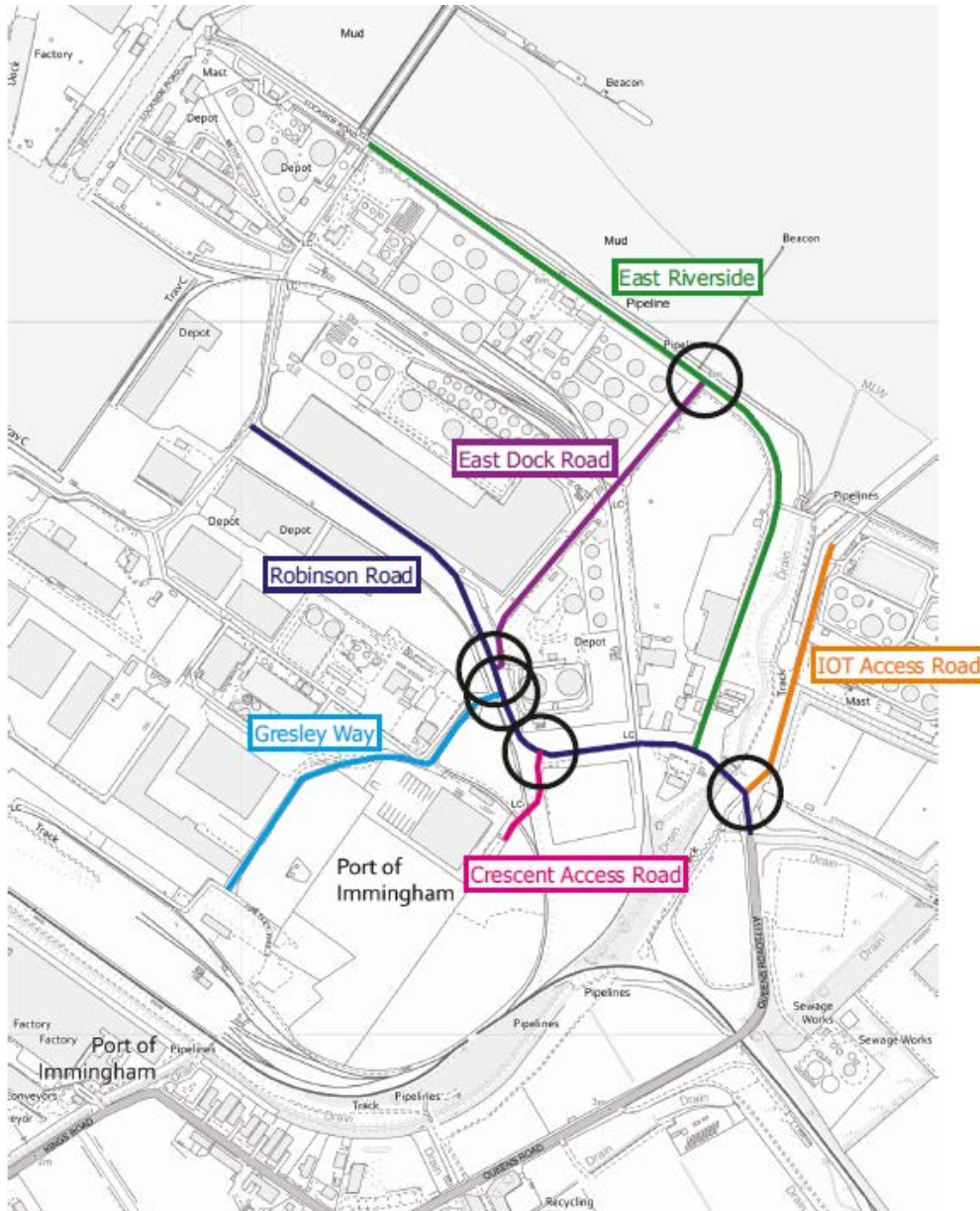
Table 1 – Gravity Model to Warehousing / Employment Facilities

	Area (ha)	Distance (km)	Gravity		Route
North Killingholme Ind Estate	47	8.8	0.031	11%	West
DSV Eastfield Road	7.6	6.5	0.007	2%	West
DFDS Eastfield Road	1.7	5.9	0.002	1%	West
Den Hartogh Eastfield Road	4.7	5.9	0.005	2%	West
Manby Road Industrial Areas	34	3.3	0.059	22%	East
Kiln Lane Industrial Areas	80	2.7	0.169	62%	East

- 2.5 Increasing the distance deterrence to -1.5 increases the use of East Gate to 90%. Reducing it to zero (i.e. when distance has no effect on choice) confirms a split of 65% via East Gate and 35% via West Gate.

3.0 Existing Surveys within the Port

3.1 As part of traffic counts undertaken for the Transport Assessment, a number of turning movement surveys were undertaken on internal port roads as reported in the TA (AS-008 Annex M) and shown below:



3.2 **Table 2** below compares the turning movements to those access points.

Table 2 – Survey of Existing Assignment of Traffic

	Total Survey		To / From East Gate			
	Vehicles	HGVS	Vehicles	HGVS	Vehicles	HGVS
IOT	488	82	415	68	85%	83%
Gresley Way	475	259	369	193	78%	75%
East Dock Road	402	340	227	212	56%	62%
East Riverside	567	241	309	89	54%	37%
Origin Fertilizer	311	279	44	24	14%	9%

3.3 It can be seen from the above that both IOT and Gresley Way have a high proportion of traffic using East Gate which supports the assumptions made in the Transport Assessment.

3.4 Movements to and from East Dock, East Riverside and Origin Fertilizers are provided for completeness but do not reflect the operation of the IERRT and can thus be discounted. This is because most of the HGV movements from this area relate to movements between storage areas and the inner harbour itself (and vice versa).

4.0 Implications for Sensitivity Testing

4.1 On that basis of the above assessments, the split for East and West Gate as adopted in the TA is considered robust. It is justified by movements from existing operations at the eastern end of the docks.

4.2 Furthermore, even if the location of facilities on the A160 were an attractor for vehicles from IERRT, that would only apply to a small proportion of total movements. As discussed above, data from DFDS suggests around 15% of movements are from the DFDS facility within the Port of Immingham to those facilities

4.3 It would therefore be inappropriate to apply a direct proportion of the movements from IERRT to West Gate in accordance with the findings of the gravity model. On that basis the applicant is willing to prepare a sensitivity analysis to consider a split of 70 / 30 using East Gate and West Gate and will present that for review by the examination.

Appendix A

Industrial Location Plan



Annex C

Response to GHD Comments

GHD Comment	Response
General Comments	
Disaggregated traffic flow diagrams illustrating for each Committed Development site	This is provided and discussed in Section 8 of this report
Evidence of the 100% of development traffic through East Gate should be provided	Not accepted. The base case for the applicant is an 85/15 split East / West Gate. Assessment of the gate capacity (Appendix X) is however provided.
Several junctions exceed the practical capacity threshold indicated by an RFC in excess of 0.85. The statement that all junctions operate within capacity should be removed	The applicants position on the policy tests applying to the development are discussed at Section 7.
Queens Road/ Laporte Road/ East Gate	
Total vehicle volumes for the Proposed Development are incorrect	Amended but has not material impact
Error in the baseline flow growth from 2021 to 2032 in the AM peak hour	Amended but has not material impact
An assessment of how queueing at the East Gate impacts the operation of the junction is needed	This is provided in the technical note at Appendix X.
A1173/ Kings Road	
Naming of roundabout arms is not consistent: <ul style="list-style-type: none"> Baseline AM peak hour tables for HGVs and PCUs Proposed Development AM peak hour tables for Vehicles and HGVs. 	This has no impact on results but has been amended.
2032 Future Baseline movements between Kings Road and the A1173 South appears to have been grown and/or converted into PCU incorrectly for the AM peak hour only	Amended
The HGV volume and HGV% in the 2021 Baseline for the movement from the A1173 South into King Road should be 27 HGVs equating to a HGV% of 13%	26 HGVs, and therefore 12% HGV%, is correct
Proposed development flows distributed through the junction incorrectly	Amended
A1173/ Kiln Lane	
There is a discrepancy between the 2021 Baseline volumes and the 2021 MCC survey data in the PM peak hour for the A1173 West to A1173 North movement where the volume of HGVs should be 37 instead of 16, which increases the HGV% from 11% to 25%	Not material but amended
2032 Future Baseline PCU for the PM peak hour is incorrect in Appendix A. The	Not material but amended

volumes in this table have been grown from 2021 Total Vehicles rather than 2021 PCUs	
2032 Future Baseline + Committed scenario is incorrect as the Committed Development volumes have been added in Total Vehicles, not in PCU	Not material but amended
A1173/ SHIIP	
The Stallingborough Interchange development flows should be included in the committed development flows, not the base flows	Not material but amended
The first matrix in the Proposed Development flows has been incorrectly labelled as HGV when it should be Total Vehicles	Not material but amended
The following geometric parameters set out within the Junctions 10 model should be reviewed: <ul style="list-style-type: none"> Approach road half width, entry width, and flare on the A1173 East approach and A1173 West approach are too generous and should be adjusted to more accurately reflect the effective widths based on existing road markings 	The assessment of geometric parameters has been checked against OS and a google earth overlay and are correct. Measurements with google background are shown on Drawing 23325-03-9.
A180/ A1173	
Justification of why the Committed Development flows have reduced significantly in this location is requested	See Section 8 for explanation
A180/ A160	
Proposed Development flows have been distributed to and from the A180 E rather than the A180 W	Amended
The circulatory flows manually input into the Junctions 10 model for this junction are incorrect	Amended
A160/ Habrough Road	
Justification of why the Committed Development flows have reduced significantly in this location is requested	See Section 8 for explanation
The following geometric parameters set out within the Junctions 10 model should be reviewed: <ul style="list-style-type: none"> Approach road half width, entry width, and flare on the A160 East approach and A160 West approach should be adjusted to more accurately reflect the effective widths based on existing road markings 	The assessment of geometric parameters has been checked against OS and a google earth overlay and are correct. Measurements with google background are shown on Drawing 23325-03a-2

A160/ Manby Road	
Justification of why the Committed Development flows have reduced significantly in this location is requested	See Section 8 for explanation
<p>The following geometric parameters set out within the Junctions 10 model should be reviewed:</p> <ul style="list-style-type: none"> Approach road half width, entry width, and flare on the A1173 Manby Road approach and the A160 West approach should be adjusted to more accurately reflect the effective widths based on existing road markings. 	<p>The assessment of geometric parameters has been checked against OS and a google earth overlay and are correct. Measurements with google background are shown on Drawing 23325-03a-3</p>
Internal Port Junctions	
The issues associated with the incorrect conversion of Total Vehicles into PCUs with the offsite junction modelling included within the TA also apply to the modelling undertaken on the internal road network.	See Section 10.