The Lake Lothing (Lowestoft) Third Crossing Order 201[*]

Document SCC/LLTC/EX/98: Summary of the Applicant's Oral Submissions at Issue Specific Hearing on Navigation Matters of 1 April 2019

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1 Introduction

1.1 Introduction

1.1.1 This document forms the Applicant's Summary of Case made at the Issue Specific Hearing on Navigation Matters of 1 April 2019.

1.1.2 It sets out the points made at that hearing and develops them further to take account of further discussions with ABP, and a further consideration of ABP's oral submissions at the Hearing and its Deadline 5 and 7 submissions.

1.1.3 Part 2 of the document updates the Examination on the position as to the data that informed the Vessel Survey Report and Port Impact Paper; explaining that it does not alter the conclusions of the latter.

1.1.4 Part 3 considers the issues in relation to berthing, dealing with both the direct impact on the berthing facilities at and adjacent to the new bridge and the impact that this direct loss has on berthing across the Port. In doing so, this paper sets out the Applicant's consideration of its previous conclusions and what ABP says the commercial effect of the Scheme has on berth occupancy, therefore answering question 1.10 of the Examining Authority's second written questions.

1.1.5 In doing so, this paper is considering, and whether it can truly be said, that in practical terms in relation to vessel movements and berth space there would be a) a detriment; and b) a detriment that is 'serious', caused by the Scheme.

2 Vessel Movements

2.1 Vessel Survey Data Discrepancies

2.1.1 The Vessel Survey analysis presented in the Port Impacts Paper (REP4 -015) is based upon 175 working days of data. The Applicant acknowledges that there was an error relating to 13 working days of data in Vessel Survey 2. Vessel Survey 2 ran from 02.1.18 to 13.4.18 with photographs timestamped with GMT. However, British Summer Time commenced on 25.3.18, meaning an adjustment should have been made to vessel transits in this period. Consequently, five bridge openings of the 48 the Applicant had previously identified in the restricted periods were actually outside these periods.

2.1.2 Additionally, following discussions with ABP over the method of operation at the control room it was agreed to consider a margin of error of two minutes at the beginning and end of each 'discouraged' period to allow for clock differences and vagaries in time keeping by bridge operatives; making this allowance the total number of vessel movements therefore reduces to 15 and the A47 Bascule Bridge openings to 10 in these periods.

2.1.3 The Ports Impact Paper (PIP) (SCC/LLTC/EX/102) submitted to this deadline has been updated to reflect this.

2.1.4 The consequences of this are:

- to demonstrate that ABP is operating the A47 Bascule Bridge in general accordance with the advertised operating regime;
- by nominally 'reducing' the number of vessel movements in the restricted time periods and 'increasing' them in the adjacent time periods, this further evidences that vessels are able to adjust their transits to take account of a bridge operating regime. This is highlighted best in relation to the PM restriction period where there were 133 vessel movements in the 15 mins following the restriction (this includes the 91 in Table 10 of the updated PIP and a further 42 recorded in the period 17:43 - 17:45). Setting that point aside momentarily, the baseline data indicates a concentration of vessel movements in the 15 minutes of the proposed 60 minute Scheme restriction that would not coincide with the 45 minutes of the A47 Bascule Bridge restriction, and as such, if the pattern of vessel movements were wholly unchanged, could purportedly elevate the relative effect of the Scheme. However, given that the existing pattern of activity arises as a consequence of vessels targeting a period immediately outside the existing restriction of the A47 Bascule Bridge to avoid being caught by the restriction and thus incur delay, it would be unrealistic to suggest that a similar situation would not prevail for the Scheme, i.e. that vessels could be

expected to generally adjust their transit times to target those windows outside the Scheme restrictions;

- that the number of bridge openings coinciding with peak hour traffic periods are broadly unchanged, due to the fact the restricted periods are of only 45 minutes duration; as such 'moving' vessel movements out of these 45 minute periods still leaves them within the 60 minutes of the peak hour period; and
- that there are no changes to the Transport Assessment for the Scheme, owing to how the SATURN and VISSIM modelling has been undertaken to support the Scheme. This is explained in the Justification and Traffic Effects of draft Scheme of Operation (REP4 -016).

2.2 Vessels Affected by Bridge Height and Restriction

2.2.1 The Applicant's views on the ability of vessels to adjust their transits is set out above, and discussed in its Deadline 7 submissions (REP7-005, p6), where it was also pointed out that the Harbour Master provided evidence to this effect.

2.2.2 The Applicant has set out in its submissions at Deadline 7 (REP7-005) that the effect of the Scheme as a deterrent to vessel operators locating west of the Scheme needs to be seen in the context of the existing constraints within the Port and the alternative options available (p6-7).

2.2.3 The Applicant has undertaken additional analysis of the number of Scheme bridge openings that would have been required having regard to the actual water levels available at the time of passage and allowing a 1m clearance for vessels passing under the Scheme bridge based on a sample number of days during the survey period. This has been compared to the number of lifts calculated using a fixed clearance of 11.5m at HAT (i.e. ignoring changes in water levels). For over 100 vessel movements there was only a change in the need for a Scheme bridge opening on 3 movements (2 vessels no longer needed an opening, 1 additional vessel needed an opening, and thus overall 1 less opening was required). This indicates that the number of Scheme bridge openings that would have been required would not differ significantly from that calculated during the initial assessment, as presented in the Application, if a 1m safety margin was applied and actual water levels were taken into account.

2.2.4 The Applicant also notes that the discussion on this issue has been focussed on clearance at HAT. It should be noted however that HAT is a theoretical value, so to illustrate the effect of how the change in water levels affects the available air draft beneath the bridge during peak hours (which is the only time when a restriction is proposed), the following table shows the instances where the water level was above the level at which there would be 11.5m under the bridge, allowing for 1m clearance at any point during the peak hours in the vessel survey.

2.2.5 By way of example, there were only three instances in the AM peak in January where there was less than 11.5m air draft (plus a 1m safety margin). On a number

of occasions this would not have prevailed for the full hour. Additionally, the data below includes weekends so in fact the coincidence with traffic peak hours may be even less than this:

Table 1 – coincidence of HAT with peak hour

	am	pm	Total
Jan	3	2	5
Feb	3	1	4
Mar	0	1	1
Apr	2	0	2
May	1	0	1
Jun	3	0	3
Jul	4	0	4
Aug	6	1	7
Sep	9	2	11
Oct	9	2	11
Nov	3	1	4
Dec	0	2	2

2.2.6 It can be seen from this table that these occurrences were very much in the minority during the recorded period, and the issue of height restrictions should also therefore be seen in this context.

3 Berthing

3.1 Berth Space lost as a result of the Scheme

3.1.1 The Applicant has reviewed the ABPmer Berth Utilisation Report ("BUR") (REP5-026) and makes further detailed comments below. The Applicant also discussed the report with ABP and ABPmer on 11 April 2019. From that discussion, the Applicant understands that ABP will be submitting a further version of the BUR, which will correct for errors in average occupancy in the Outer Harbour and provide further clarity in some areas, for example in relation to CTV numbers (as was queried by the Examining Authority at the Issue Specific Hearing on navigation matters). For that reason, the comments below should be considered interim.

3.1.2 The BUR sets out in section 1.1 a number of overarching statements, that as a consequence of the Scheme:

- North Quay 2: "effectively lost due to its limited utility"
- North Quay 3: "lost in entirety" and
- North Quay 4 East: "effectively lost in entirety"

3.1.3 ABPmer goes on to state that ABP considers it would not be practical or feasible to rearrange bollard restraint points and thus longer vessels that would normally span a number of these berths would be displaced, and consequently considers the berth loss is 165m. This position is also conveyed in chapter 10 of ABP's Written Representation.

3.1.4 ABP has claimed that berth loss should be calculated in relation to whole berths, as identified by their historic berth numbering, and that any berth that is potentially affected, regardless of how small the effect may be, should be considered as if it were lost in its entirety for all potential operations.

3.1.5 The Applicant considers this to be a gross exaggeration of the impact should the Scheme be built, a position that is to some extent backed up by evidence submitted by ABP themselves:

- Firstly, as noted in the Applicant's Deadline 7 submissions (REP7-005, p35), the Harbour Master, at the ISH, confirmed that berthing allocations in the Port are historic and essentially have a referencing function. The actual mooring positions of vessels vary with vessel size and are rather dictated by bollard positions, with decisions made dynamically according to berth availability, as such measurement of impact in 'whole berths' is irrelevant. A partial impact on a berth should be appreciated in that context.
- Secondly, in section 5.3.1. of the BUR and by cross-reference at section 5.4.1 of BUR, ABPmer has not treated North Quay 2 as a lost berth, rather "North Quay 2 was reduced from 60m to around 50m". Indeed, ABP has suggested it wishes to create an aggregate handling facility at North Quay

1 and North Quay 2 (see section 5.4.1 of the BUR), which would have the effect of creating a single dedicated large vessel berth covering these berths, capable of handling aggregate dredging and import vessels up to 100m in length. This scenario is therefore reflected in Tables 5 & 6 (i.e. with and without the Scheme) of the BUR. In this case there would therefore be no diminution in the utilisation of North Quay 2 which could not be considered "effectively lost" as it will continue to fulfil the future role that ABP has identified for it.

- Thirdly, appended to ABP's Vessel Mooring Systems in Tidal Ports Paper (REP5-030) is mooring analysis undertaken by ABPmer in relation to North Quay 1 and North Quay 2 berths. Section 4 of that analysis shows bollard positions on these berths and various berthing contingencies. It is clear from that large vessels (such as Britannia Beaver (99.95m LOA)) can continue to berth across North Quay 1 and North Quay 2, with the Scheme in place. The Applicant would also note that the bollard arrangement in this report is incorrect and the overall effect is to omit a bollard.

3.1.6 ABP have indicated that there are various physical constraints to how they are able to operate at the berths adjacent to the Scheme, for example the locations of bollards and fences. However, ABP have acknowledged that these are a legacy of past operations at the Port and it is the Applicant's opinion that, should it improve capabilities to operate in these areas post Scheme construction, alterations to these features could be undertaken, and the Applicant is willing to discuss the necessity and delivery of such works with ABP.

3.1.7 The Applicant has therefore produced a further figure (appended) which shows the position of the Scheme and its land take in relation to the bollard positioning along north quay. The bollard positions are verified from onsite topographic survey. The effect of the Scheme is to remove access to up to four bollards. The distance between the bollards east and west of the Scheme that may continue to be used is 60.95m, therefore confirming that the 62m of quay that the Applicant has identified as being lost to the Scheme is an accurate reflection of the impact of the Scheme. Further inspection of this drawing indicates that, for certain vessels, the outermost two of the four lost bollards may remain useable for head or stern lines as, dependent on the locations of fairleads on the vessel, there would be no physical impediment to lines laid to these bollards. The Applicant does not consider, given the positioning of the bollards that remain available, that there is any need for, or benefit in, repositioning bollards but is willing to discuss this matter with ABP, as noted above.

3.1.8 The potential to adjust existing infrastructure as part of the Scheme is of particular relevance in relation to North Quay 4E where a fence and gate between the quayside and Shed 3 form a delineation between it and North Quay 4W. By moving this fence to the eastern end of Shed 3, as shown on the appended figure, the length of North Quay 4E not occupied by the Scheme could readily be incorporated

into North Quay 4W while maintaining the secure arrangements for Shed 3 and its berth. An alternative repositioned fence position is also shown that would 'capture' an additional bollard, having regard to the point above that in some circumstances this bollard may still be a feasible option for mooring some types of vessels. For this reason, the Applicant does not agree that this berth is "effectively lost", a minor reconfiguration is required to permit this berth's ongoing utility.

3.1.9 The Applicant maintains that the impact on berthing in the Port should also be seen in the context of the type and in particular LOA of vessels typically using the Port. A distribution is set out in Table 13 of the Port Impacts Paper (REP4 -015). As can be seen a significant proportion of vessels visiting the Port are less than 30m LOA and as such retention of over 30m of North Quay 4E (as explained in the Port Impact Paper, paragraphs 6.1.8 – 6.1.9) becomes relevant in this context.

3.1.10 The Applicant recognises that suspended quays create some challenges for mooring of smaller vessels including CTVs, but as ABP outlined in its Deadline 7 submissions (REP7-006, Annex 3) efforts have already been made in the Port to employ additional fendering for CTVs to enable them to lie safely alongside at suspended quay areas. Similarly, the Applicant is receptive to assisting in such mitigation measures if it is beneficial to the carrying on of ABP's undertaking.

3.1.11 In summary, the total length of quay that will be unavailable for vessels to berth against on completion of the scheme is 62m (including up to four bollards) and this is the only length of berth that should be considered as a direct loss.

3.1.12 While other lengths of quay may have a reduction in functionality under current operational circumstances, this is not to say that they will continue to suffer such in the future as operational requirements will change (for example in relation to the creation of a dedicated aggregates berth, as envisaged by ABP). These impacts could be further mitigated with minor accommodation works, such as repositioning of fencing and provision of fenders.

3.2 Consequence of that lost berth space to current and future berth usage.

Average Berth Occupancy

3.2.1 The Applicant has been able to establish the derivation of average berth utilisation figures which have been combined to obtain the Average over the Inner Harbour berths values in the tables in the BUR. Following discussions with ABP and ABPmer on the 11 April 2019, ABPmer have confirmed there is a calculation error relating to berth utilisation in the Outer Harbour and consequently the "all port berths" figures. It is understood this will be corrected.

Berth dedication

3.2.2 The treatment of berth dedication has a very significant bearing on the data presented in BUR. Table 1 sets out which berths are currently dedicated in the Port, while section 4.3 accompanied by Table 2 explains that berths privately owned, or on a long-term lease to a specific operator are excluded from the analysis. The berths therefore excluded from the analysis in relation to commercial vessels (by

comparison to Table 1) in the Inner Harbour are CEFAS and in the Outer Harbour Harbour, SLP north and South. Silo Quay is said to be dedicated in Table 1, but nonetheless appears in Table 2, while it is noted that parts of Hamilton Dock, Trawl Dock and Waveney Dock are dedicated, but do also appear in Table 2, recognising there is some available capacity in them.

3.2.3 In the assessment of berth utilisation for the past situation, as set out in Tables 3 and 4, the scenario in relation of dedication prevails as described above (Silo Quay shown to have a berth utilisation of 21.7% to 30.9%, albeit noted as dedicated in Table 1).

3.2.4 As noted above, it is stated that dedicated berths are excluded from the analysis, however they are not excluded from the analysis in Tables 5 and 6, where additional berths are dedicated: North Quay 1 and North Quay 2, North Quay 6 and North Quay 7 and Town Quay 2 and Town Quay 3 (all in the Inner Harbour) and this dedication is denoted by affording these berths a 100% berth utilisation. This raises a number of issues:

- Firstly, it is the Applicant's contention that for the purposes of calculating average berth occupancy across the Inner Harbour it is more appropriate to simply note these berths are dedicated rather than assign them as 100% because it is unlikely that a berth dedicated to a single operation would have a 100% utilisation (the utilisation of Silo Quay is an example of this) and applying a 100% value has the effect of significantly increasing the overall averages in the summary to the tables. To adopt this approach would therefore apply the same logic that has been applied in Tables 4 and 6 which simply notes that berths North Quay 3 and North Quay 4E are 'lost', and therefore removed from the equation. They are not, by comparison, marked as 100% utilised.
- Secondly, while it is accepted that there are sound reasons for dedication of berths, it is relevant to consider whether the dedication strategy within the BUR is robust.
  - Town Quay 2 & 3: It is believed the basing of Petersons in the Port is referred to as opportunity 2 in section 5.4.1 of the BUR. It is also understood from Mr Harston at the ISH that it is the desire of Petersons to be relocated from North Quay 6 to Town Quay 2 and 3. As such it is reasonable to dedicate either North Quay 6 or Town Quay 2 and 3 on account of Petersons.
  - In the scenario Peterson relocates from North Quay 6, that berth becomes vacant, though as ABPmer set out in section 5.4.1 an opportunity also exists for an oil and gas operation to be located at North Quay 6 and 7 requiring their dedication (understood to be referred to as opportunity 1 in section 5.4.1 of the BUR). However, that same section of the report suggests that there is a 50% probability of both opportunity 1 and 2 prevailing. The BUR report however bases its analysis on the premise that both opportunities do

prevail by dedicating both Town Quay 2 and 3 and North Quay 6 and 7 for future scenarios. As such no account is made of the likelihood of opportunity 1 not prevailing in Tables 5 and 6 of the BUR.

- North Quay 1 and 2: two opportunities are said to exist in relation to marine aggregates, the second of which relates to supporting the construction of Sizewell C. Again, a probability of 40-50% is applied to the realisation of both these opportunities. This section also explains that the frequency of vessel visits associated with these opportunities means that North Quay 1 and 2 would be dedicated. Similarly to above, no account is made of the likelihood of either of these opportunities not prevailing in Tables 5 and 6 of the BUR. (As noted above, ABPmer consider these opportunities remain in both the future with- and without Scheme scenarios, contradicting the assertion that North Quay 2 is "effectively lost").

- Thirdly, the dedication of a berth then necessitates the reallocation of vessels currently contributing to its berth utilisation figure to other berths which are not dedicated (as explained in Vessel Displacement section 5.4.1 of the BUR), then simultaneously elevating their utilisation, i.e. there is a 'double benefit' to berth utilisation because not only is one berth afforded 100%, the berth accommodating the deflected traffic also benefits – so it is clear how dedication of a given berth creates a cascade effect through the BUR. This becomes particularly relevant where the dedication of berths deflects vessels to North Quay 3 (lost to the Scheme) which then have to be reassigned again to North Quay 5 (as stated in section 5.5.1), which is already under pressure from the dedication North Quay 6 and North Quay 7 – which does ultimately result in 'lost business' (see below).
- Finally, it is not clear why Shell Quay has not been dedicated, which is typical practice in the Port for CTV operators (noting East Anglia One has parts of Hamilton Dock dedicated, and Greater Gabbard has part of Trawl and Waveney Docks dedicated) and the BVG report makes a similar point (section 3.5). Had Shell Quay been dedicated in the analysis that would have had a bearing on the relative effect of the Scheme as presented between Tables 5 and 6. Instead of 100% utility being applied in both cases, actual berth occupancy figures are presented. As such it is apparent how dedication of berths can be used to present a particular scenario.

3.2.5 As a consequence of the above, 6 of the 14 berths in the Inner Harbour are immediately elevated to 100% berth utilisation. A comparison between their past and future occupation for the BUR is shown below.

Table 2 - comparison between past and future berth utilisation for newly dedicated berths

	2015-2017 average (past) (from Table 3)	2015-2017 average (future) (from Table 5)
NQ 1	36.1%	100%
NQ 2	16.7%	100%
NQ6	55.1%	100%
NQ7	36.5%	100%
TQ2	24.3%	100%
TQ3	28.3%	100%
Average	32.8%	100%

3.2.6 The Applicant considers the dedication strategy applied in the BUR has the effect of considerably inflating the overall averages for berth occupancy in the Inner Harbour. Correcting this, by instead removing those berth occupancies of 100% from the averages drops the 2017 averages from 73.4% to 53.4% without the Scheme (Table 5) and from 87.7% to 75.4% with the Scheme (Table 6).

Table 3 – Effect of removing dedicated berths from berth occupancy averages (without Scheme)

	Future without scheme			Future without scheme Revised		
Berth	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**
NQ1	100	100	100	Dedicated		
NQ2	100	100	100	Dedicated		
NQ3	57.8	70.1	64.6	57.8	70.1	64.6
NQ4E	24.3	50.4	57	24.3	50.4	57
NQ4W	0.6	27.9	7.1	0.6	27.9	7.1
NQ5	31.1	36	55.9	31.1	36	55.9
NQ6	100	100	100	Dedicated		
NQ7	100	100	100	Dedicated		
Shell	64.4	43.3	98.1	64.4	43.3	98.1

Silo	30.9	21.7	28.7	30.9	21.7	28.7
Talisman	34.1	50	32.6	34.1	50	32.6
Town1	15.2	55.2	83.3	15.2	55.2	83.3
Town2	100	100	100	Dedicated		
Town3	100	100	100	Dedicated		
Inner Harbour Average	61.3	68.2	73.4	32.3	44.3	53.4

Table 4 - Effect of removing dedicated berths from berth occupancy averages (with Scheme)

	Future with scheme			Future with scheme Revised		
Berth	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**
NQ1	100	100	100	Dedicated		
NQ2	100	100	100	Dedicated		
NQ3	Lost			Lost		
NQ4E	Lost			Lost		
NQ4W	23.9	64.5	56.3	23.9	64.5	56.3
NQ5	67.3	82.1	85.9	67.3	82.1	85.9
NQ6	100	100	100	Dedicated		
NQ7	100	100	100	Dedicated		
Shell	15.6	5.1	32.1	15.6	5.1	32.1
Silo	30.9	21.7	28.7	30.9	21.7	28.7
Talisman	125.7	127.9	165.8	125.7	127.9	165.8
Town1	15.2	55.2	83.3	15.2	55.2	83.3
Town2	100	100	100	Dedicated		
Town3	100	100	100	Dedicated		
Inner Harbour Average	73.2	79.7	87.7	46.4	59.4	75.4

3.2.7 It should also be reiterated this revision simply applies the removal of the dedicated berths from the analysis of average utilisation, it does not seek to address a situation where:

- one or more of these berths are not dedicated
- the effect of the Scheme on berthing at North Quay 4E is not as ABPmer assumed (because with a relocation of the security fence, that remaining quay can be added to North Quay 4W) and therefore more berthing space is available.
- the underlying assumptions applied from the BVG Report and the Unpublished Port Masterplan (discussed further below) are incorrect

Berth reassignment

3.2.8 Berth reassignment occurs for two reasons in the BUR; firstly, that a berth has become dedicated, and secondly, the effect of the Scheme.

3.2.9 In the case of the first point, the dedication strategy in the BUR contributes to a situation in the future in the absence of the Scheme (Table 5) where there is 'lost business'; this is largely caused by the dedication of deep water berths at North Quay 6 and North Quay 7 and Town Quay 2 and 3 which then limits available berths for vessels requiring greater than 4m draught. For example, Section 5.4.1. identifies the potential for lost business in the absence of the Scheme for two service operational vessels that cannot use Town Quay. Indeed, the extent of lost business remains the same with the Scheme (Table 6) as without it (Table 5) because that same issue arises. The narrative accompanying Table 6 also refers to lack of space for CTVs – and this is revisited below. In that context, the BUR appears to set out that the principal effect of the Scheme is therefore loss of CTV business as opposed to any other form of business.

3.2.10 In respect of the second point, the Applicant notes the reasoning for a number of the reassignments applied in the future scenarios in the BUR does not appear to be sufficiently justified in the accompanying text and the logic behind some of the reassignments can be difficult to follow. North Quay 4W benefits little from displaced vessels even though it has the same depth as North Quay 4E and North Quay 3 from where vessels are being displaced. In the 'past situation' as shown in Tables 3 and 4, berth utilisation is the same across all years. In the future situation, without the Scheme, berth utilisation on North Quay 4W is significantly less than any of the past situations. It thus quite difficult to fully understand how the reassignments have been undertaken.

3.2.11 For reasons explained earlier on, the Applicant does not agree that North Quay 4E should be considered a lost berth, rather the remaining balance should be added to North Quay 4W. This could then affect the reassignment of vessels from other areas of the Port, because North Quay 4W would then become over 30m longer.

The consequence of the retention of North Quay 4E is considered further below. Additionally, the Applicant does not agree that 10m should be deducted from North Quay 2 and, as suggested in section 5.3.1., consequently all vessels over 30m LOA be displaced. In any event it is not wholly clear how relevant this assumption is, because North Quay 2 becomes a dedicated berth anyway, so in effect all vessels are displaced from it.

3.2.12 A significant reassignment in the BUR relates to the reassignment away from Shell Quay of 50% of CTV operations in both the base case (section 5.3.1 states 50% of baseline operations will be moved) and the future case (section 5.5.1 states 50% of CTV operators are displaced to Talisman's quay). As noted above, the Applicant has set out in its submissions at Deadline 7 (REP7-005) that the effect of the Scheme as a deterrent to vessel operators locating west of the Scheme needs to be seen in the context of the existing constraints within the Port and the alternative options available (p6-7). It therefore considers such assumptions, which if applied to their conclusion in the ABPmer report, meant the operator avoided the Port of Lowestoft altogether, unduly pessimistic. The particular way the BUR has looked at CTV matters is discussed further below.

3.2.13 The Applicant has therefore used the data included within the BUR to adjust the reassignment of the proportion of the vessels transferred from Shell Quay, on the basis that the impact of the Scheme is not considered sufficient to justify no increase in the future usage of Shell Quay. Instead, the Applicant considers it is reasonable that 50% of that will still happen. Additionally, the reintroduction of part utilisation of the remainder of berth 4E has been assumed. Alternatively, one could add the remainder North Quay 4E (34.5m) to North Quay 4W (95m), which would create a berth of 129.5m, which could then be used as a single berth or divided in to more evenly sized berths.

3.2.14 These alterations in assumptions taken with the removal of the dedicated berths (as described above) reduce the 2017 Inner Harbour utilisation from 87.7% to 58.3%, which would place the Port at just below the middle of the "busy, but balanced" category as set out in ABPmer's report.

Table 5 - Reassignment of berth utilisation at Shell Quay and North Quay 4E

	Future with scheme Alternative		
Berth	**2015**	**2016**	**2017**
NQ1	Dedicated		
NQ2	Dedicated		
NQ3	Lost		
NQ4E	35	35	35
NQ4W	23.9	64.5	56.3

NQ5	67.3	82.1	85.9
NQ6	Dedicated		
NQ7	Dedicated		
Shell	32	21	49.05
Silo	30.9	21.7	28.7
Talisman	53	60	70
Town1	15.2	55.2	83.3
Town2	Dedicated		
Town3	Dedicated		
Inner Harbour Average	36.8	48.5	58.3

CTVs

3.2.15 It is difficult to follow in the BUR how matters relating to CTV operations have been considered. The Applicant makes the following observations:

- In section 4.2, under Table 1, it is unclear how the respective percentages of 45% and 55% are derived as it not stated how this relates to CTV operations as described in the 'past situation' (2015-2017), currently, or in the future.
- It is stated at 5.2.1 that in relation to Shell Quay, in the past situation, up to 9 CTVs are assumed to berth here and this is represented in the available data, and presumably therefore recorded in the 50.6% berth utilisation figure for 2017 in Table 3. It is deduced from the BUR (though it is not explicitly stated), that a notional berthing of CTV creates a 50% utilisation recognising it is at sea for 50% of the time and at berth for 50% of the time. As such 9 vessels on Shell Quay would create a 50% utilisation of Shell Quay, and equally with 18 vessels double-banked this would therefore equate to a 100% utilisation.
- It is stated at 5.3.1 that 50% of baseline operations (presumably four vessels, because that is the capacity of Talisman's Quay for CTVs when double-banked – see section 5.5.2) would be moved from Shell Quay to Talisman's Quay in the past situation, with the Scheme in place. It also states, up to 9 vessels may remain on Shell Quay, albeit as noted above, it is understood there are only 9 vessels at Shell Quay in the past situation.
- The consequence of this is to take berth utilisation at Talisman's Quay to over 90%. However, ABP in its Written Representation at paragraph 3.12 identifies Town Quay as an "offshore energy related vessel berth" capable

of accommodating CTVs. Berth utilisation on Town Quay 2 and Town Quay 3 reaches a maximum of 43% in Table 4 of the BUR, as such it is not clear whether some CTVs could have been allocated to these berths in the 'past situation'. A higher utilisation of berths accommodating CTVs is potentially less of an issue than with common user berths, depending on CTV operational schedules.

- In relation to the future situation in section 5.4.1 it is explained that 24 CTVs regularly use the Port and they are mainly operating in the Outer Harbour. Paragraph 14.10 of ABP's Written Representation states that East Anglia ONE (Scottish Power Renewables) utilises 6 CTV berths and Greater Gabbard (SSE) operates between 14 – 18 CTVs in the Outer Harbour, which presumably creates the 24 CTVs referred to by ABPmer.
- Section 5.4.1. also references the BVG report and the Unpublished Port Masterplan in setting out the potential for up to 50 CTVs to regularly visit the report (the provenance of this figure is discussed below).
- Vessel double banking is discussed towards the end of this section, where it is set out that 18 vessels would be double banked at Shell Quay and 4 double banked at Talismans Quay. This combined with the statement in section 6 that "Hamilton Dock, Trawl Dock and Waveney Dock are all operating with no capacity for any further vessels without major port infrastructure development" along with the dedication of Town Quay, suggests that the maximum CTV berthing capacity in the Port is 46 vessels (24+18+4). However, as the Applicant noted in the Port Impact Paper (see paragraph 3.3.47), 50 CTVs do not necessarily require 50 berths: it is a question of scheduling as to how many berths are required at any one time.
- As Table 5 then sets out, the consequence of an increase in CTV vessels is broadly reflected in an increase in berth utilisation at Shell Quay, which has increased from 50% in the past situation to 98% in the future situation (Table 6). The other changes between tables 5 and 6 broadly appear to stem from the dedication of various berths, as discussed above.
- Table 6 then reflects that 50% of the 18 CTVs at Shell Quay are deflected to Talisman's Quay though it is already double-banked with 4 CTVs, as such there are physical issues of accommodating a further 9 CTVs here.
- However, understanding the BUR is complicated by the fact that berth utilisation estimates are derived from the amount of time at which a vessel is present in a berth, rather than the number of vessels *per se* (see section 3). This addresses the point above that a berth can accommodate more than one vessel, provided that second vessel does not need to operate an identical schedule to the first.
- It is understood from ABPmer that in order to create estimates of berth

utilisation by CTVs in the future case in the Inner Harbour, ABPmer has taken data associated with the operation of CTVs in the Outer Harbour and factored that up to create a total amount of time which is then apportioned to berths capable of accommodating CTV vessels. As noted above, 9 CTV vessels are already included in the base case (past situation), therefore that 'factoring up' should be based on scheduling of a further 17 CTV vessels in the Inner Harbour (50 (BVG estimate), less 24 based currently in the Outer Harbour, less 9 already included in the base data). It is not clear if this is the approach that has been undertaken in the BUR.

- Of note, therefore, in the scenarios described above, both the past situation (no Scheme, Table 3) and future (with Scheme, Table 6), result in 9 CTVs being based at Shell Quay. The berth utilisation at Shell Quay for these two scenarios as set out in the BUR is below:

Table 6 – Comparative effect on berth utilisation of 9 CTV vessels being based at Shell Quay

	2015	2016	2017
Table 3	0.0	2.9	50.6
Table 6	15.6	5.1	32.1

- Again, it is difficult to unravel how berth utilisation figures have been derived. It is acknowledged that as a non-dedicated berth, Shell Quay has the potential to accept reassigned vessels in Table 6 (where the dedication of berths and the Scheme has an effect), but the BUR does not identify Shell Quay as a berth to which vessels are displaced. It is particularly unclear how the addition of 9 CTVs to the berth in 2017 in the past situation elevates berth utilisation to over 50% from 3%, whereas a similar number increases berth utilisation to 30% from 5% in the future.
- Finally, while the ABPmer report makes assumptions in the future case about double banking of CTVs on Shell Quay in the absence of the Scheme (as discussed section 5.4.1), in concluding (section 6) it suggests that "it is possible that operators will not agree or permit the double banking of vessels, due to the time critical nature of their operations and health and safety concerns relating to save access". In that case, then the Scheme would have no effect on CTV operations, because only 9 vessels would ever be accommodated on Shell Quay, and that is what is assumed by ABPmer in future case, with the Scheme in place.
- The Applicant understands that ABPmer is updating the BUR, including providing additional clarity in relation to CTV matters.

Unpublished Port Masterplan

3.2.16 The BUR makes a number of references to ABP's Unpublished Port Masterplan in reliance of a number of assumptions within the BUR, particular relating to future opportunities (section 5.1) and scenario assumptions (section 5.3.1 and section 5.4.1). Evidently this is not before the Examination and it is therefore difficult to comment on its veracity and consequently it is suggested that it is therefore difficult to afford weight to it without being able to interrogate the aspirations and feasibility of the proposals therein.

BVG Associates, 2018. Offshore wind opportunities in the Port of Lowestoft.

3.2.17 The Applicant has provided commentary on this report in its Deadline 7 submissions (p3-4 in particular). The principal points were that:

- For 50 CTVs to be frequenting the Port of Lowestoft (which peaks in 2031, see Figure 3, p14 in the BVG report), this would appear to require the Port securing all of the CTV requirements for the remaining Round 3 windfarms as set out in Table 1 of the BVG report and 2.5GW of potential Round 4 windfarms and extensions as set out in Table 2 of the BVG report. It is understood that Operation and Maintenance CTV requirements for Galloper are operated from Harwich, not Lowestoft as it is understood BVG has assumed.

- Having regard to the relative location of the round 3 windfarms, peak demand would likely be for 36 CTVs

- Additional CTV berth demand in the Port beyond which can be accommodated in the Outer Harbour (26 berths, p24 BVG report) is unlikely to prevail until several years after the Scheme is completed (even if the identified windfarms keep to the programme assumed in Table 2 of the BVG report) (see Figure 3 in BVG report), by which point the Scheme and its operating regime would be well-established

- Not all future windfarms may be consented. Environmental issues will need to be overcome, particularly with regard to Habitat Regulations Assessment. The Crown Estate is currently preparing a plan level HRA for wind farm extensions, due to be completed in the summer of 2019, which will determine which of the extension projects will be granted rights. Crown Estate currently plans to launch Round 4 in late spring 2019, though its progression will similarly be informed by HRA and other environmental considerations.

3.2.18 Additionally, the BVG report seems to suggest at Figure 8 there is an effective CTV berth supply of 70 CTV berths in the Port absence of the Scheme, but only 26 (i.e. those in the Outer Harbour) in the presence of the Scheme, i.e. the Scheme results in the loss of 44 potential CTV berths. These 44 berths appear to comprise 18 berths at Shell Quay and 26 further berths on North Quay – the narrative on p24 suggesting these are "towards the middle or western end of North Quay". This contrasts with the assumptions made in the ABPmer report, which suggests that in the future CTVs may only be berthed at Shell Quay and Talisman's Quay (and ABP

has noted itself elsewhere the challenges of mooring CTVs at berths with suspended deck), with the western end of North Quay (i.e. North Quay 6 and 7) dedicated to an oil and gas operation, with North Quay 5 accommodating the displaced vessels.

3.2.19 Additionally, the BVG report ostensibly relying on similar 'discussions with operators' to the ABPmer report (see section 6.1 in the BVG report) assumes that no CTVs at all would berth west of the Scheme. As discussed above, the ABPmer report assumes that 50% of business is deterred from locating west of the Scheme. As such there is something of a mismatch between the various reports on the future planning for the Port of Lowestoft.

4 Conclusion

4.1 Conclusion

4.1.1 The Applicant does not deny that the Scheme will bring a change to the Port of Lowestoft. However, a change in and of itself does not necessarily mean that a serious detriment is caused.

4.1.2 In relation to the impact on vessel movements associated with the Scheme of Operation, the Applicant acknowledges that there will be a change from 45 minutes to an hour of restriction for some vessels. As this paper has explained, however, it is clear from the Vessel Survey results and the fact that ABP does operate the A47 Bascule Bridge in accordance with the advertised restrictions, that vessels are able to manage their time so that their transits align with opening periods currently.

4.1.3 Furthermore, such restrictions are evidently only relevant where the air draft of a vessel cannot be accommodated without a bridge lift (having regard to the fact that an air draft of less than 11.5m during peak hours is relatively infrequent), and the vessel is not tidally restricted.

4.1.4 In relation to the direct impact of berthing, the Applicant acknowledges that 62m of berth space is directly lost, however the Applicant does not consider that the Berth Utilisation Report (BUR) presents a robust case that such a loss presents a significant impact for the Port. It is unequivocally the case that based on recent berth occupancy in the Port (2015-2017) berth utilisation rates in the Inner Harbour remain acceptable.

4.1.5 In the future case, where berth utilisation rates increase more sharply, this is to a significant extent due to the dedication of berths and the somewhat opaque reassignment process. Indeed, ABPmer present a situation where lost business is the same with or without the Scheme and those lost vessels are deep drafted vessels (over 4m), which could not in any event be accommodated on the berth that is lost to the Scheme (North Quay 3).

4.1.6 Furthermore, as this paper has set out, the quay space adjacent to the bridge will be able to be used by vessels that call at the Port of Lowestoft and can therefore continue to accommodate ABP's future aspirations – and this is acknowledged in the ABPmer report which dedicates North Quay 1 and North Quay 2 for aggregates use with and without the Scheme. With limited accommodation works, the residual length of North Quay 4E also remains of use. As such, the fact that it may in some circumstances be less 'efficient' or less of a 'best fit' to operate a quay in a slightly different way, as expressed by ABP at the hearing, is clearly not seriously detrimental.

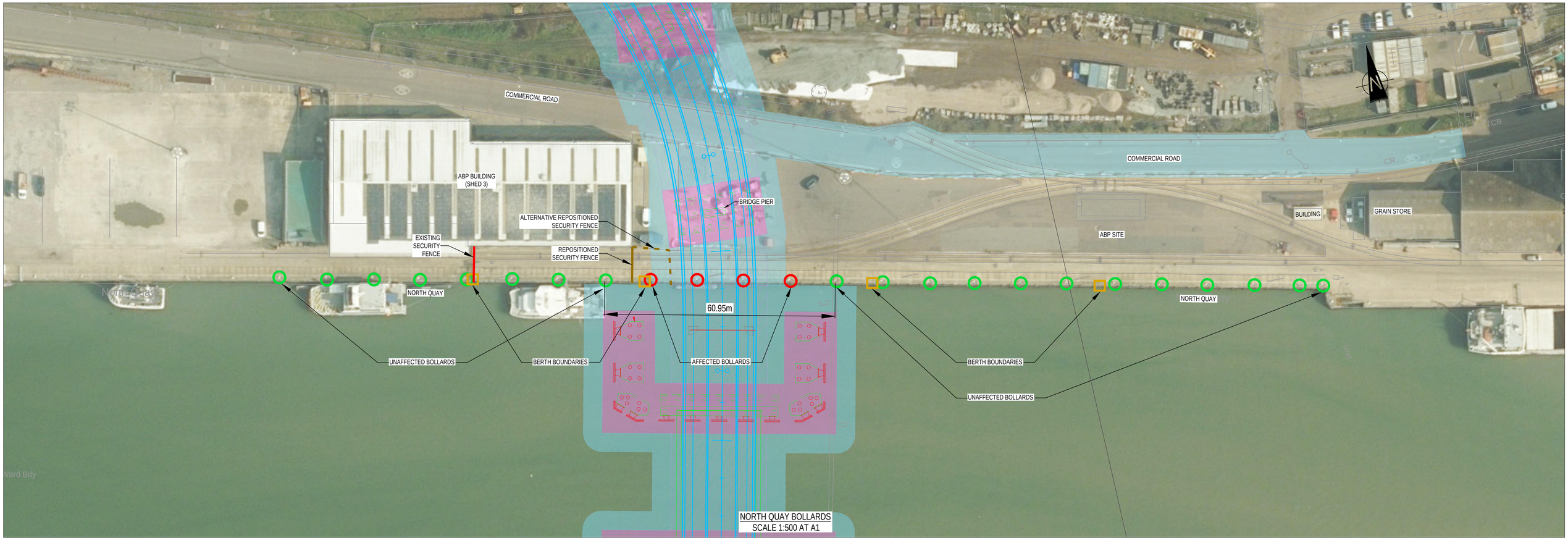
4.1.7 Consequently, the principal impact that the BUR seeks to demonstrate is that CTV operators will be less attracted to Shell Quay owing to the presence of the Scheme. The Applicant considers that such judgements need to be seen in the context of the relative attractiveness of other locations, and the evidence of the ability for CTV

operators to work around restricted opening periods, which they currently do, alongside the likely demand for CTV berths and over what timescale (including relative to when the Scheme becomes operational).

4.1.8 ABP has therefore submitted two papers to the Examination, the BUR and the BVG reports, upon which it relies heavily. The Applicant has shown in its submissions at the hearing and in this paper that the existence of these reports does not by itself demonstrate that any detriment would be caused. They need to be objectively considered, and in that vein the Applicant has identified a number of weaknesses in their reasoning and assumptions and therefore considers they should be given commensurate weight, particularly as it is these very reports upon which ABP seeks to argue that a 'serious' detriment would be caused.

4.1.9 In conclusion, therefore, whilst the Applicant can agree that the Scheme creates an additional consideration which will influence Port operations, ABP's own evidence and other submissions do not objectively demonstrate that a serious detriment would be caused.

Appendix A: North Quay Bollards


COMMERCIAL ROAD
ABP BUILDING
(SHED 3)
ALTERNATIVE REPOSITIONED
SECURITY FENCE
EXISTING
SECURITY
FENCE
REPOSITIONED
SECURITY FENCE
BRIDGE PIER
COMMERCIAL ROAD
ABP SITE
BUILDING
GRAIN STORE
NORTH QUAY
NORTH QUAY
60.95m
UNAFFECTED BOLLARDS
BERTH BOUNDARIES
AFFECTED BOLLARDS
BERTH BOUNDARIES
UNAFFECTED BOLLARDS
NORTH QUAY BOLLARDS
SCALE 1:500 AT A1