Great Yarmouth
Third River Crossing Order 202[*]

Document NCC/GY3RC/EX/045: Deadline 4: Responses to Written Representations submitted by Interested Parties at Deadline 3

Planning Act 2008

Infrastructure Planning

The Infrastructure Planning (Examination Procedure) Rules 2010

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Foreword

This Responses to Written Representations submitted by Interested Parties at Deadline 3 is part of the Examination submissions relating to an application ('the Application') submitted by Norfolk County Council ('the Applicant') to the Secretary of State for a Development Consent Order ('DCO') under the Planning Act 2008.

If made by the Secretary of State, the DCO would grant development consent for construction, operation and maintenance of a new bascule bridge highway crossing of the River Yare in Great Yarmouth, and which is referred to in the Application as the Great Yarmouth Third River Crossing (or 'the Scheme').

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Glossary of Abbreviations and Defined Terms

CoCP	Code of Construction Practice
CPA	County Planning Authority
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DfT	Department for Transport
DML	Deemed Marine Licence
EIA	Environmental Impact Assessment
ES	Environmental Statement
ExA	Examining Authority
GYBC	Great Yarmouth Borough Council
GYPA	Great Yarmouth Port Authority
GYPC	Great Yarmouth Port Company
ISH	Issue Specific Hearing
LIR	Local Impact Report
LLFA	Lead Local Flood Authority
MCMS	Marine Case Management System
MMO	Marine Management Organisation
NCC	Norfolk County Council
NE	Natural England
NPS	National Policy Statement
pNRA	preliminary Navigation Risk Assessment
PRA	Preferred Route Announcement
RYA	Royal Yachting Association
SOCG	Statement of Common Ground
SuDS	Sustainable drainage system

The Applicant	Norfolk County Council (in its capacity as Highway Authority and promoter of the scheme)
The Scheme	The Great Yarmouth Third River Crossing project for which the Applicant seeks development consent.

1 Introduction

1.1 Purpose of this Report

1.1.1 This report, submitted for Deadline 4 of the Examination, contains the Applicant's responses to Written Representations submitted by interested parties for Deadline 3, 28 November 2019.

1.1.2 Written Representations were submitted by the below parties:

- Norfolk County Council (REP3-018)
- Great Yarmouth Port Authority and Great Yarmouth Port Company (REP3-019)
- Goodchild Marine Services Limited (REP3-020)
- Great Yarmouth Borough Council (REP3-021)
- Marine Management Organisation (REP3-022)
- Michael Boon (REP3-023 and REP3-024)
- Royal Yachting Association (REP3-025 and REP3-026)

1.1.3 The report provides the Applicant's response to the issues raised, thereby providing a reference document for all interested parties and the Planning Inspectorate.

1.1.4 There were some Written Representations that did not make any point requiring a response. For each of those cases, those interested parties and issues raised are not identified in the tables following in this report.

2 Norfolk County Council (REP3-018)

2.1 Key Issues and Applicant's Responses

Key Issue

Article 20, Discharge of Water

2.1.1 NCC would like to see an amendment to (6). Currently it reads:

(6) The undertaker must take such steps as are reasonably practicable to secure that any water discharged into a watercourse or public sewer or drain under this article is as free as may be practicable from gravel, soil or other solid substance, oil or matter in suspension.

2.1.2 NCC would like to see the addition, after the word "suspension" the words

"and to secure that any water discharged does not create adverse flood risks".

2.1.3 The purpose of Article 20 is to regulate the connections the applicant makes with drainage features. It is submitted that the addition of the words recommended by NCC will ensure that if, in the very unlikely event, a person who owns a sewer or drain refuses to approve a connection because of adverse flood risk this will not constitute an unreasonably withheld approval for the purposes of Article 20.

2.1.4 These words would not provide an absolute imperative on the part of the applicant to ensure that there shall be no adverse flood risk but requires the applicant to take such steps as are reasonably practicable to secure that any water discharged does not create adverse flood risks.

2.1.5 The project, if consented, could be constructed within the flood plain of an ordinary water course as the LLFA and applicant are still reviewing information on this issue. There is flooding in the catchment of this watercourse relatively frequently, the last date being 6 October 2019. Flooding has occurred internally and externally of houses upstream; further information is contained within the NCC Local Impact Report. The applicant's Drainage Strategy and Flood Risk Assessment are inconsistent in places and the LLFA has requested clarification. Currently NCC has not seen details of mitigation measures that may be necessary to avoid adverse flood risks.

2.1.6 NCC would welcome the ability, if invited, to work with the applicant to assess the risks and discuss measures that would mitigate those risks. If the Statement of Common Ground with the Lead Local Flood Authority is unable to resolve matters NCC would invite the ExA to hold a hearing into flood risk.

Applicant's Response

2.1.7 Following further discussions, the Applicant has agreed with the County Planning Authority (CPA) that the drafting of Article 20 included in revision 2 of the draft DCO (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010) is appropriate, being well precedented and reflecting the regime established by the Water Industry Act 1991. It is also agreed that the appropriate place to address the management of flood risk from surface waters in relation to the Scheme is in the requirement requiring the CPA's approval of the written details of the surface water drainage scheme, following consultation with Great Yarmouth Borough Council, the Lead Local Flood Authority (LLFA) and Anglian Water (in respect of its sewerage undertaker functions). The Applicant has agreed to include additional explanation in the final version of the Explanatory Memorandum (to be submitted towards the end of the examination) to address the CPA's residual concern regarding the interpretation of that requirement.

2.1.8 The Applicant continues to work closely with the LLFA on matters relating to the proposals for the management of flood risk arising from surface waters. The key requirements of the drainage scheme are set out in the Drainage Strategy (Appendix 12C of the Environmental Statement, (Document Reference 6.2, Planning Inspectorate Reference APP-136) compliance with which would be secured by the surface water drainage requirement. The intention is for the parties to arrive at an agreed position by Deadline 5.

Key Issue

Requirement 4, Design of the authorised development

2.1.9 As drafted the Requirement reads:

4.— (1) The authorised development must be designed and implemented in general accordance with—

(a) the general arrangement plan; and

(b) the approach to detailed design.

2.1.10 The National Policy Statement for National Networks (Dec 2014) ("the NPS") sets out criteria for 'good design' for national network infrastructure and in para 4.29 states

Visual appearance should be a key factor in considering the design of new infrastructure…sensitive to place…matched by an appearance that demonstrates good aesthetics as far as possible.

2.1.11 The NPS places emphasis on 'good design' and there are further references to design and aesthetics elsewhere in the document which the ExA will be aware of such as para 5.110 relating to *SuDS and how SuDS features can include vegetation to help manage flood risk.*

2.1.12 Para 5.130, which states… *the consideration of design should include scale, height, massing, alignment, materials, use and landscaping (for example, screen planting).*

2.1.13 Para 5.160 states*…materials and designs for infrastructure should always be given careful consideration.*

2.1.14 Para 5.198 referring to *the use of materials that reduce road noise, (for example low noise road surfacing).*

2.1.15 Whilst not forming part of the NPS, NCC considers the Ministry of Housing, Communities & Local Government, National Design Guide (October 2019) another material consideration. Supporting the National Planning Policy Framework and continuing the ethos of achieving good design in development, paras 20 and 21, set out components of good design which includes, *layout, the form and scale of buildings; their appearance; landscape; and materials.*

2.1.16 The approach to detailed design document states at para 3.1

The Scheme would be a piece of dynamic architecture…

2.1.17 And at para 1.3 states

All visual aids shown in this document are indicative…must not be construed as binding the detailed design…Each section then specifies the Essential Design Requirements and Design Aspirations and Opportunities for that component.

2.1.18 The approach to detailed design document and the general arrangement plan together with the Article relating to Limits of Deviation and Requirement relating to landscaping provide the design parameters for the detailed design of the project.

2.1.19 Design is a material consideration when determining the application to make a Development Consent Order, although it is acknowledged that the design of a structure of this nature and magnitude may have design limits. Since the hearing on 20 November 2019, NCC has been invited by the applicant to work with the applicant to develop the detailed design and this opportunity is welcomed.

2.1.20 NCC is mindful of the importance given to good design by the National Policy Statement for National Networks. To give effect to the achievement of good design NCC is mindful of the general expectation that there would be independent scrutiny of the details of the design either by the ExA or delegated to the county or relevant planning authority via the use of a Requirement.

2.1.21 Following the Issue Specific Hearing on the 20 November 2019, NCC and Applicant have met and agreed to work together to produce a revised Requirement 4 to address the matters raised at the ISH with the aim to submitting updated text for Requirement 4 at Deadline 4.

Applicant's Response

2.1.22 The Applicant acknowledges that the National Policy Statement for National Networks places an emphasis on good design. This is discussed in further detail in paragraphs 7.5.34 to 7.5.41 of the Applicant's Case for the Scheme (Document Reference 7.1, Planning Inspectorate Reference APP-188). The Applicant's Design Report (Document Reference 7.4, Planning Inspectorate Reference APP-195) reports on the development of the reference design for which the Applicant seeks development consent and explains how the requirements for good design in national and local policy, as well as best practice, have been considered in that design. The Design Report notes that a limited degree of flexibility is required, reflected in the limits of deviation in article 6 of the draft DCO, of the development consent to ensure future innovation or unforeseen circumstances can be accommodated through the detailed design.

2.1.23 Appendix A to the Design Report (Document Reference 7.4a, Planning Inspectorate Reference APP-196) sets out how the detailed design of the Scheme will be developed. Requirement 4 of the draft DCO requires the detailed design to be in general accordance with both the Approach to Detailed Design and the General Arrangement Plans (Document Reference 2.2, Planning Inspectorate Reference APP-007). The Applicant considers therefore that the Scheme meets the requirements for good design and that there is adequate information available to the examination for the principles governing the detailed design of the Scheme to be scrutinised through the current examination.

2.1.24 Following further discussions with the CPA, the Applicant has reached an agreed position, whereby a new requirement 5 would be added to the draft DCO requiring the CPA's approval of the details of aspects of specified structures (control tower, plant room and the finish and external materials of the bridge deck) comprised within the authorised development. The new requirement is included in Revision 3 of the draft DCO (Document Reference NCC/GY3RC/EX/048), submitted for Deadline 4 and is discussed in greater detail in the accompanying Explanation of Changes document.

Key Issue

Requirement 5, Code of Construction Practice

2.1.25 The Applicant provided to NCC a revised Requirement on 19 November.

2.1.26 The proposed redraft reads as follows

Code of construction practice
5.—(1) No part of the authorised development is to commence until a code of construction practice for that part of the authorised development has been submitted to and, following consultation with Great Yarmouth Borough Council, the lead local flood authority, the IDB and the Environment Agency, approved in writing by the county planning authority.
(2) Any submitted code of construction practice must include provision for the following matters—
(a) an arboricultural method statement;
(b) a construction traffic management plan;
(c) a flood management plan;
(d) a materials management plan (or equivalent);
(e) a site waste management plan; and
(f) a workforce travel plan.
(3) Any code of construction practice submitted under sub-paragraph (1) must be in accordance with the outline code of construction practice.
(4) Any part of the authorised development must be carried out in accordance with the relevant code of construction practice approved under sub-paragraph (1) for that part.

2.1.27 NCC has no, in principle, concerns about the revised drafting, but would highlight the need for the final version of the CoCP to cover issues related to local flood risk.

2.1.28 NCC also notes that in the redrafted Requirement at (3) the code of construction practice must be in accordance with the outline code of construction practice.

2.1.29 Given that there will be no further opportunity to address omissions NCC, if invited, would like to work with the applicant in identifying omissions in the outline code of construction practice and improving its clarity in order to ensure that the submitted code of construction practice can be approved and the Requirement discharged in a timely manner. NCC will work with the applicant to resolve this matter prior to the close of the examination.

Applicant's Response

2.1.30 The Applicant welcomes the CPA's confirmation that it is content with the revised requirement 5 (which will be requirement 6 in Revision 3 of the draft DCO (Document Reference NCC/GY3RC/EX/048)).

The Applicant will continue to work with NCC to address their concerns relating to local flood risk and the measures set out in the Outline Code of Construction Practice and notes that discussions on both matters are ongoing.

Key Issue

Requirement 6, Landscaping scheme

2.1.31 The drafting of this requirement is under discussion with the aim to reach agreement with the applicant by Deadline 4. The purpose is to ensure that the requirement is both precise and enforceable but sufficiently flexible.

Applicant's Response

2.1.32 The Applicant has agreed with the CPA on a revised requirement 6 (of Revision 2 of the draft DCO) which is included in Revision 3 of the draft DCO (Document Reference NCC/GY3RC/EX/048) submitted at Deadline 4 as requirement 7. The accompanying Explanation of Changes document discusses the amended requirement in more detail.

Key Issue

Requirement 8, Contamination

2.1.33 NCC recommends that in para (1)(b) Great Yarmouth Borough Council be added as an organisation to be notified given its statutory roles in the areas of environmental health and health and safety.

Applicant's Response

2.1.34 This amendment was made in Revision 2 of the draft DCO (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010), submitted at Deadline 3.

Key Issue

Requirement 9, Preparedness and Response Plan

2.1.35 NCC recommends that in para (1) the Norfolk Fire and Rescue Service and the Norfolk Constabulary be included as consultees.

Applicants' Response

2.1.36 This amendment was made in Revision 2 of the draft DCO (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010), submitted at Deadline 3.

Key Issue

Requirement 10, Surface water drainage

2.1.37 NCC recommends that in para (1) Anglian Water in their capacity as sewerage undertaker be included as a consultee.

Applicant's Response

2.1.38 This amendment was made in Revision 2 of the draft DCO (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010), submitted at Deadline 3.

Key Issue

Requirement 13, Archaeology

2.1.39 Subsequent to the hearing NCC has received further information from the applicant and is content that the figure 10 metres remains in the Requirement as originally drafted.

Applicant's Response

2.1.40 The Applicant acknowledges this confirmation.

Key Issue

Schedule 2, Part 2 Requirements 18 & 19, Applications made under requirements

2.1.41 NCC is concerned that a period of 6 weeks is unduly short to discharge some of the Requirements and notes that under the Town and County Planning Act 1990 regime the discharge period for conditions for EIA development is unlimited. NCC is also concerned that there is a deemed discharge procedure.

2.1.42 During the hearing on 20 November the applicant suggested that it might be able to agree a process and draft it into the dDCO whereby it could carry out an informal consultation of the relevant consultees prior to making an application to discharge or part discharge a Requirement.

2.1.43 This is welcomed by NCC and since the hearing held on 20 November NCC and the applicant have discussed this further and wish to draft amendments to the dDCO which will embed such a process within the dDCO. It is anticipated that a further draft will be available by Deadline 4, 11 December.

2.1.44 It has also been agreed between NCC and the applicant that if NCC needs to request further information from the applicant that the time period should be increased from 21 days as currently drafted to 28 days.

2.1.45 It is anticipated that NCC and the applicant can agree redrafted Requirements 18 and 19 for submission by Deadline 4, 11 December.

2.1.46 NCC and the applicant have agreed, in order to assist NCC is processing a discharge or partial discharge quickly and efficiently there will be:

- More early engagement and front loading of the provision of information to NCC embedded into the dDCO, and
- Discussions between the parties over the timetabling of applications to discharge to avoid too many concurrent applications

2.1.47 NCC and the applicant intend to provide a written Statement of Common Ground, if possible, by Deadline 4 and anticipate that all matters contained in these comments will be resolved by Deadline 5.

Applicant's Response

2.1.48 The Applicant included in Revision 2 of the draft DCO (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010) a new requirement 17 which formalises the duty on the Applicant to submit with an application for approval under a requirement a summary consultation report. The Applicant considers that this amendment ensures that consultees views

are considered before details are submitted which will facilitate timely determination. Since Deadline 3 the Applicant and the CPA have continued to discuss the procedural arrangements for the discharge of requirements.

2.1.49 The Applicant has reached an agreed position with the CPA on these matters, which is reflected in Revision 3 of the DCO (Document Reference NCC/GY3RC/EX/048) submitted for Deadline 4. The accompanying Explanation of Changes document discusses the drafting in more detail. In summary it is agreed that the determination period is increased from 6 weeks to 8 weeks, the period within which the CPA may require further information is increased from 21 to 28 days and the provisions relating to deemed approval are retained to ensure a timely determination of such applications, within the expanded determination period. Taking together the changes made in Revision 2 and Revision 3 of the draft DCO, the Applicant considers an appropriate balance is struck between the timely processing of applications under requirement allowing for appropriate time for scrutiny.

3 BDB Pitmans LLP on behalf of Great Yarmouth Port Authority and Great Yarmouth Port Company (REP3-019)

3.1 Key Issues and Applicant's Responses

Key Issue

Preliminary Navigation Risk Assessment - 6.4

Page 5,3.2.10

3.1.1 Noted the foreseeable risks identified refer to the "stage of design". Recognise there may be a requirement to revisit this process, pending any changes to bridge design and/or to address issues arising in the period post-Construction.

Applicant's Response

3.1.2 Agreed, the Applicant anticipates conducting a further review/update during the examination period, currently anticipated to be in January 2020, with subsequent exercises during design, construction and pre-operation.

Key Issue

Page 10, 5.2.1

3.1.3 All individual vessel movements for commercial traffic are NOT controlled by the Statutory Harbour Authority. There is a requirement to inform the Port of intended movements. The Port, via its Local Port Services will provide information to assist safety of navigation. Control is exercised where assessed appropriate and is exercised e.g. by Pilotage requirement. When requested, marine support for movements is provided by the Port (Pilotage and Mooring). However, the degree of CONTROL exercised by GYPC is significantly less than under a Port VTS Service. The Port exercises very little regulation of Non-Commercial movements in the port. This latter point will require review with pontoon waiting areas for Leisure vessels planned to be situated adjacent to the bridge.

Applicant's Response

3.1.4 Noted, the Applicant has updated the wording in this section at the last pNRA update (Document Reference NCC/GY3RC/EX/029, Planning Inspectorate Reference REP2-015) however, the original wording was based

on the definition used in the Ports Byelaws; "*Vessel Traffic Service - means the Authority's system for the management and control of the movement, berthing and mooring of vessels in the port area and the employees of the Authority engaged in the operation thereof."* (GYPA Haven Byelaws 1997).

Key Issue

Page 15, 7.3.5

3.1.5 It should be clear that a Vessel commences a movement with a Berth to Berth Passage Plan i.e designating a single destination. Presently, there is no express provision to deal with a closed bridge at the location proposed for the GYTRC. After the bridge is in place, the vessel Passage Plan for all the vessels wishing to transit the bridge will require amendment. The amendment will recognise a port blockage exists at the time of final approach to the harbour (or at point before all mooring lines are disconnected in case of a departing vessel).

3.1.6 As a direct consequence to this new hazard, a radically different set of risk assessment criteria will become applicable. Laso, a heightened requirement arises for dynamic re-assessment constantly applied until the bridge is confirmed open.

3.1.7 In the event of bridge failure to open, there is a possibility of mitigation for the vessel by using alternative manoeuvre. However, the effectiveness will diminish with closing proximity to the bridge (with exception of manoeuvre to a designated emergency layby berth – which provides a complete mitigation). An alternative complete mitigation is to confirm the bridge is open before entry to the port.

3.1.8 The availability of alternative manoeuvre and its effectiveness (if the option is viable) will vary significantly by Vessel and by prevailing conditions and congestion in the port at the material time. The potential exposure arising from miscalculation is Very High. The number of Variables inherent in the assessment is significant, many out-with control and other constantly changing (e.g tide).

3.1.9 NCC recognises the significance of appropriate bridge operational procedures. Discussion with the Port is essential to develop suitable measures and ensure adequate resource is provided to implement the procedures agreed.

Applicant's Response

3.1.10 The Applicant acknowledges these comments and their relationship with the further comments made in GYPC's written summary of oral submission, paragraphs 3.1.43-3.1.54.

3.1.11 The Applicant agrees and recognises the significance of bridge operational procedures and continues to work with GYPC in developing appropriate systems to ensure these objectives are met.

Key Issue

WSP Hazard ID Table ID No 14

3.1.12 This item deals with consequence for bridge asset. There must be an additional HAZ ID to deal with failure of bridge to Open as the hazard, with scenario involving an approaching Commercial (Large) vessel.

3.1.13 This correctly is Ranked No.1. The Hazard type= Port Blockage and Cause = Bridge failure to Open. Mitigations include Bridge design/resilience, Methodology to open including Staff available 24/7, provision of Emergency Layby Berth to mitigate Vessel striking the bridge and/por damage to the Vessel and/or Infrastructure and/or Environment.

Applicant's Response

3.1.14 The Applicant notes GYPC's comments on individual risk items and will include consideration of these items on the agenda for the next pNRA update workshop, currently anticipated to be undertaken January 2020. However, it is noted that the consequences of a bridge failure were one of the considerations evaluated in the preparation of the pNRA and discussed at the HAZID workshop.

Key Issue

Mouchel GYTRC dated 14 Dec, 2016

Page 15, 5.4

3.1.15 Bridge Operational Constraints - We note the estimate of time to complete the process to open the bridge = 4 minutes. Suggest this is VERY BEST CASE. Does this duration account for the time to receive the Open request (including transaction + reaction time (s)? The comment suggesting an approach time equal to the travel time for an approaching vessel and a multiple 2 x vessel length radically misleads a proper assessment of the bridge time open duration.

Applicant's Response

3.1.16 The derivation of "bridge open" times in this report (Appendix B to the pNRA (Document Reference NCC/GY3RC/EX/029, Planning Inspectorate Reference REP2-015)) was specifically to provide an assessment of the range of input parameters to the Traffic Assessment models, the graph in

question (Figure 11) shows a range of opening durations from just over 4 minutes to almost 15 minutes. As this was intended to input into the traffic modelling it therefore relates to the impact on road traffic and all timings begin from the activation of the traffic control system so transaction/reaction times are not included, the Applicant acknowledges that there are process activities that would occur in the operation of the bridge including notifications by vessels and start-up procedures that sit outside of this time.

Key Issue

Page 36 - Key Point. The difficulties encountered.

3.1.17 Note there are no existing (general) restrictions preventing vessel movements. There may be a requirement to recommend/impose restrictions after the bridge is in place (and/or during construction) as a consequence of the new structure.

Page 37, 6.1 Key Findings

Bullet point 5

3.1.18 The following text should be added “In the bridge open for vessels position…”. The addition of the bridge in its normal closed position clearly is significant to this category of vessel.

Bullet point 10

3.1.19 Whilst the 6 knots rate was recorded elsewhere and not considered as part of the simulations, the tide is a factor for a vessel transit to/from the bridge location is relevant to the Passage Plan and available mitigations in event of bridge failure to open.

Bullet point 11

3.1.20 There are no restrictions presently in place and movements are assessed on basis of prevailing conditions. There may be a requirement for restrictions post-bridge. These could degrade the commercial position of the port and/or incur increased cost of working.

Bullet Point 13

3.1.21 This requires confirmation (as it is not our recollection from the simulations). Further, it has no appreciation of a VESSEL under way in restricted-to-manoeuvre circumstances with arising consequence for Bridge and VESSEL. The expected bridge Open time must be calculated in an altogether different manner. The reference to vessel movements data supplied by Peel is similarly misleading.

3.1.22 No comment on the Scheme traffic assessment is made here.

Applicant's Response

3.1.23 Bullet 5 – Noted, while the context of the conclusions is not changed the wording will be amended at the next pNRA update.

3.1.24 Bullet 10 - The flow rates used in the final simulations were produced by the hydrodynamic modelling and represent the best estimation of tidal conditions upon Scheme construction.

3.1.25 Bullet 11 - Noted, it is considered that restrictions may only be needed in severe adverse weather conditions.

3.1.26 Bullet 13 – The references in this report relate to the first and second stage simulations only, they accurately reflect the outputs from those exercises. The reference to movement data supplied by Peel is similarly correct, this data was the basis of the movements and timings produced in the report in Appendix B to the pNRA.

Key Issue

Shipmove GY3C V2 11/10/2019

Page 18 4.4

Conclusions

Bullet Point 1

3.1.27 We disagree the comment "these effects are of a similar order to those already existing and reference to vessels berthed both sides of the river". The comments in this section omit any mention of the bridge failure to open; this is the default position after construction.

Page 19, 5.2

3.1.28 Query the Jet Stream effect being experienced at differing distances up/downstream from the bridge. Our experience of the river indicates the Ebb is stronger than Flood. Hence, downstream effect is expected to be greater/ certainly no less than the Upstream. The likely effect on Berths immediately downstream of the bridge is anticipated to become a greater challenge for mooring safely.

The effect of movement on berth immediately upstream is significantly changes as a consequence of the bridge. These (Bollard Quay) may require to be clear for safe departure from Atlas Quay.

Page 19, 5.4

Vessel Limits and Entry Times.

3.1.29 The para commencing "PSV vessels berth.." is incorrect. It is frequently the case PSVs swing within the river. A suitable position to make the manoeuvre is off the berth at ASCO. The bridge, when construction commences, will remove an accepted swinging area of the PSVs and got Gen Cargo vessels using Berth 14. The loss of room to manoeuvre consequentially increases the requirement for transits astern (with the attendant parameters affecting this evolution)

Page 20 5.5.1

3.1.30 The statement on current rate (low) at the bridge does not match our experience (particularly at/near Spring tides)

Page 20, 5.6

Bridge Failure Contingencies

3.1.31 There was no in-depth discussion at this time of mitigation available for failure of the bridge to open. The statements following (1-4) must be taken in context of no formal assessment.

Page 20 5.7

Slack Water Transits

3.1.32 The comment relating to not ruling out a requirement for more than 1 tide being required for certain transits is noted. This is not presently the case and such scenario will have commercial consequences for the Port and its stakeholders.

Page 22 6.2

Berth Occupancy

3.1.33 The port has express intention all berths are full at all times. The predictability of traffic movements at GY is highly variable. Customers expect the Port to deliver on berth requests based on a 2-hour advance notice regime. Planning for empty berths would be extremely difficult and lead to loss of Income for the Port. The need to vacate berths to accommodate other vessels does not frequently arise and brings incremental risk to safe navigation. A designated emergency layby berth alleviates this issue.

Applicant's Response

3.1.34 All comments are noted by the Applicant, these relate to an assessment report prepared by an independent expert and most concern differences in professional interpretation, the report represents an interpretation of the outcomes of the simulation and is only one aspect inputting into the preparation of the pNRA, these differences of opinion are considered in the preparation of the pNRA and, as GYPC's forgoing comments indicate, they do not reduce the overall validity of the pNRA. Therefore, the Applicant will limit its response to those items related to that context of the statements;

3.1.35 5.2 - The effect of the bridge on operational berths upstream (north) were highlighted because they are closer to the bridge structure therefore more within the area of effect than those downstream (south) (Berth 14A (up) is 30m from bridge 12D(down) is 70m, 31B(up) is 65m, 32A (down) is 115m).

3.1.36 5.6 - It is accepted that the statement made was prior to the undertaking of the pNRA HAZID workshop and therefore outside the formal assessment process however it subsequently fed into this process and was incorporated into the pNRA.

3.1.37 5.7 - Noted, this is not anticipated to be the case in all but the most extreme of weather and vessel combinations.

Key Issue

HR Wallingford DJR6162-RT001-R02-00

Summary

The para commencing For supply vessel operations..

3.1.38 Suggest delete the word "reduced" and replace with "less".

3.1.39 This Summary raises 2 key points:

1. Difficulty with departure from Beth 14. Use of Atlas Quay becomes significantly different, as a direct consequence of the bridge. Tidal stream changes and close proximity to be bridge require a much great degree care and skill is exercised for a VESSEL safely to manoeuvre on/off of Atlas. The residual navigation safely risk is mitigated by Bollard Quay remaining clear. Bollard Quay is expected to be a location for the Leisure vessel waiting area(s) and the residual length to the N of the bridge will also need to be kept clear (as demonstrated in the relevant simulations). This could lead to Bollard becoming essential to support safe navigation and becoming non-viable as an operation berth.

2. Critical that communication protocols are agreed an in place. These will be dependent on availability and location of an emergency layby berth.

Applicant's Response

3.1.40 Again, these comments relate to an assessment report prepared by an independent organisation, although the Applicant would respond to the points as follows;

3.1.41 Point 1 - Noted, it may be the case that for certain vessels in specific environmental conditions that Bollard Quay would need to be vacant to allow a safe departure from Berth 14A (Atlas Quay), it is not considered that this should render the extent of Bollard Quay non-viable for operational use on an on-going basis.

3.1.42 Point 2 – The Applicant agrees that operational communications will be key to the successful operation of the bridge.

Key Issue

Summary of Oral Submission

3.1.43 (1) This document summaries the case put forward by GYPC and GYPA (the Port) at the Issue Specific Hearing 1 on the Effect on Port Operations which took place at Lord Nelson Conference Centre Great Yarmouth Racecourse on 19 November 2019.

3.1.44 (20) Nick (NB) of BDB Pitmans represented GYPC and GYPA and was assisted by Gary Doyle (GD) and Richard Goffin (RG).

3.1.45 (3) The ExA inquired whether the Port remained concerned at the lack of provision of an emergency lay-by berth as set out in representations made at Deadline 2. NB confirmed that the Port was still concerned by the potential risk to vessels, users and the Port.

3.1.46 (4) At NB's request GD detailed the Port's concerns.

3.1.47 (5) GD explained that when a vessel approaches the Harbour it designates a single destination. If a vessel plans to reach a berth north of the proposed bridge it must be recognised that a closed bridge exists as a blockage at the time when the vessel sets out to make its final approach to the Harbour. The new bridge constitutes a new hazard a new risk assessment is required taking this into account.

3.1.48 If the bridge does not open for whatever reason as explained at 7.3.5 of the Applicant's Preliminary Navigation Risk Assessment (NCC/ GY3RC/ EX/029) there is a possibility of mitigation for the vessel by using an alternative

manoeuvre. The effectiveness of this diminishes the closer the vessel gets to the bridge unless there is an emergency lay-by berth.

3.1.49 The effectiveness of such alternative manoeuvre will vary significantly vessel by vessel and by prevailing conditions and congestion in the harbour at the material time.

3.1.50 The river is narrow. There are a number of areas where combustible material is stored. There may well be no alternative berth available and even if there were they may not be manned at the appropriate time and may have insufficient draft at low tide. There are also electric cables crossing the bottom of the river close to the bridge which pose an additional hazard.

3.1.51 (6) It should also perhaps be noted that the pontoons provided for the use of recreational craft awaiting a bridge opening are also in close proximity. The danger to the craft was expressed at the Hearing by both those representing the RYA and Goodchild Marine Services Limited.

3.1.52 (7) In response Mark Kemp from the Applicant, Norfolk County Council, expressed the view that an emergency lay-by was unnecessary believing the additional risk could be mitigated.

He explained as follows:

(i) Smaller vessels could manoeuvre into a safe place or return to sea;

(ii) Larger commercial vessels could berth at an emergency berth which could be arranged in coordination with the GYPA and

(iii) If no safe emergency berth was available, the bridge would be opened prior to the vessels entering the River

3.1.53 (8) On learning this NB thought at first glance that this suggestion might be a way forward. He wondered whether such an offer might be secured by way of a Requirement in the Order. It was essential that the position was secured in the Order for the protection of all stakeholders of the Inner Harbour.

3.1.54 (9) Michael Bedford QC for the Applicant said he would like to consider with his clients the most appropriate way of securing this protection.

Applicant's Response

3.1.55 The Applicant has submitted the Written summaries of oral submissions made at Issue Specific Hearing 1 on the Effect on Port Operations (ISH1) held on 19 November 2019 (Document Reference NCC/GY3RC/EX/036, Planning Inspectorate Reference REP3-007), which provides a summary of

the submissions made by Norfolk County Council at the Examination Hearing.

4 Goodchild Marine Services Limited (REP3-020)

4.1 Key Issues and Applicant's Responses

Key Issue

Breakdown or maintenance

4.1.1 The question was asked re repairs or breakdowns and in what position would the bridge be. Please confirm I have seen it on SoCG for Alicat Marine that in the event of operational failure the bridge would be moved to the raised position to continue to allow Navigation and reduce hindrance on Marine vessels until the fault is repaired. Also refers DCO schedule 14 para 70. I wonder can this be reinforced for maintenance as well? I full appreciate the need to carry out such repairs as re surfacing in the down position, but I would like to see more clarity in the DCO of the position of the bridge for general maintenance and breakdowns please.

Applicant's Response

4.1.2 There are a number of controls within the DCO in relation to this matter:

4.1.3 Articles 23(4), (7) and (8) provide that a narrowing of the River Yare during maintenance, or full closure where there is no reasonable alternative, can only happen with the consent of the GYPA and must be notified in Lloyds List, on the website for the bridge, and in areas adjacent to the closure for a period of 14 days (partial closure) or 21 days (full closure) before the closure comes into effect (except in an emergency where it must be as soon as possible). The GYPA must as soon as practicable after that consent also issue a notice to mariners giving the commencement date and anticipated duration of the temporary closure.

4.1.4 Paragraph 2 of Schedule 10 (Scheme of Operation) which provides that "In the event of scheduled maintenance of the bridge structure, road surface, machinery or associated equipment, such that the bridge is unable to open upon request, the undertaker is to provide a minimum of 14 days' notice, in writing, to GYPA stating the following; (a) start date and time of the scheduled maintenance; (b) duration the bridge will be out of operation; and (c) scheduled date and time of the bridge returning to operational state".

4.1.5 Paragraph 66 of the Protective Provisions for the GYPA which provides that: 1) The undertaker must, before placing any temporary structure or apparatus over the river required in connection with the maintenance or repair or renewal of a specified work [i.e. authorised development which may materially affect the river or is situated upon, across, under, or over or within

15 metres of the river], comply with the reasonable requirements of the GYPA, such requirements to include— (a) the undertaker providing the GYPA with 42 days' written notice of this requirement **so that the GYPA may bring these works to the attention of users of the river**; and (b) **receiving approval from the harbour master**, but on terms that such approval must not be unreasonably withheld or delayed. (2) In the case of any work carried out in an emergency the undertaker is only required to give such notice to the harbour master as may be reasonably practicable in the circumstances.

4.1.6 There are therefore a number of controls on how the Applicant will be able to undertake general maintenance of the new bridge which ensure that the effects on river users are able to be taken into account.

Key Issue

Long term breakdown or closure of the river

4.1.7 If there is a long delay on building the bridge and the river is closed for a substantial length of time, what is the system to mitigate businesses loss due to this occurrence?

Applicant's Response

4.1.8 Although no statutory grounds for compensation apply to such a scenario, it is important to note that Article 23(3) of the DCO provides that temporary closures of the River Yare for construction must only take place on no more than 3 occasions and the period of closure on each such occasion is not to exceed 72 hours.

4.1.9 As this is written on the face of the Order, there must be compliance with it, and therefore there will not be a substantial closure of the channel, or the need to mitigate for such a closure.

4.1.10 Article 23(4) is also noted, which allows the Applicant, above and beyond the above restriction, to be able to partially reduce the width of the River Yare within the Order limits. However, this power is subject to the restrictions identified in paragraph 4.1.2.1 which will enable the effect to port users to be considered.

4.1.11 These points can also be seen in the context of the principle at paragraph 2.7.1 of the Outline CoCP (Document Reference NCC/GY3RC/EX/043, Planning Inspectorate Reference REP3-014), which states that the Contractor should seek to maintain the navigation channel at all times except where it is needed to facilitate construction.

Key Issue

Commercial and Recreational Craft

4.1.12 I still think there is confusion in various documents of classification of commercial and recreational craft, we are referred to as recreational many times in speak because of our yard being on the Broads Network and this is not the case. We are Commercial and Leisure and so are many other yards on the Broads network although our craft are not of the size of the ships moored in Great Yarmouth Harbour.

Applicant's Response

4.1.13 The Applicant acknowledges comments made regarding the definitions of vessel class used in the dDCO and will incorporate an alternative definition within the next update to the dDCO to address these concerns.

Key Issue

With reference to the Document NC/GY3RC/ EX/030 Preliminary Navigation Risk Assessment

4.1.14 Scheme Description – 2.25 does not refer to commercial vessels and there be commercial transits from Breydon Waters, not only our company but other companies further into the Broad Network.

4.1.15 3 Existing Stakeholders of the Port – I am unsure why we are not included in this list if you refer to 3.1 first paragraph description of who was included

4.1.16 5.1.2-5.1.5 better description of vessels that the DCO [needed].

4.1.17 Recommendations – 7.5 Recreation Vessel Movements it refers to recreational vessels from Norfolk Broads, there will be Commercial as well as Leisure/ Recreation also on transit

4.1.18 We are still in the process of completing a SoCG with NCC.

Applicant's Response

4.1.19 In respect of paragraph 2.25 in the pNRA (Document Reference NCC/GY3RC/EX/029, Planning Inspectorate Reference REP2-015), the comment is noted and the description will be updated at the next pNRA review.

4.1.20 In relation to Section 3 (of Appendix B to the pNRA) the scope of this original report was confined to consultations with land operations within the GYPC-adjacent area. Whilst the report itself does not specifically quantify the

number of vessels transiting to the broads, the daily averages suggested in the conclusions (20, leading to 7300 operations per year) remains a substantial uplift on the number of passages currently occurring (9 per day to port areas, up to 5 per day to Breydon giving 14 total: figures from GYPC).

4.1.21 Considering the comment on paragraphs 5.1.2 to 5.1.5 in the pNRA, Goodchilds' comment is noted and as described in 4.1.13 above.

4.1.22 Looking at Section 7.5 in Appendix B of the pNRA, the comments relate specifically to implied movement restriction which would not apply to commercial vessel movements and thus would not apply to Goodchild.

4.1.23 The Applicant confirms it is working to produce a SoCG with Goodchild Marine.

5 Great Yarmouth Borough Council (REP3-021)

5.1 Key Issues and Applicant's Responses

Key Issue

5.1.1 As was expressed by the (Norfolk) County Planning Authority orally at the session, an important element of the proposal is how particular requirements (landscaping, for example) will be consulted on and (if appropriate) discharged by the CPA. This involves, in many cases, GYBC being consulted by the CPA on the details (Requirements) submitted by the Applicant.

5.1.2 Discussion at the Hearing session on this point centred on the adequacy of the consultation period proposed by the Applicant – namely, six weeks. The CPA was concerned that such a period would be too short to allow it to undertake consultation on the Requirement (both internally, and externally (to GYBC, for example)) and reach a decision by the six-week deadline.

5.1.3 As was stated orally, GYBC recognises and shares this concern. GYBC will itself need to do internal consultation on proposed Requirements (to various departments/Services, such as Environmental Services) and it is therefore important that there is sufficient time to complete this process appropriately. GYBC was therefore pleased to hear, at the Hearing session, the Applicant propose that it could undertake a kind of "informal" consultation of relevant consultees prior to making a formal application to discharge a Requirement and include this in the draft DCO. Concerns about the potential for too many concurrent applications (and the consequent strain on CPA, GYBC and other consultees' resources) were also raised at the Hearing by the CPA and GYBC, and likewise it was pleasing that the Applicant agreed to discuss this outside the Hearing session with the CPA.

Applicant's Response

5.1.4 During the hearing on 20 November the Applicant suggested that it might be able to agree a process and draft it into the dDCO whereby it could carry out pre-submission consultation of the relevant consultees prior to making an application to discharge or part discharge a Requirement. This was written into the draft DCO in requirement 17 of Revision 2 (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010). The Applicant considers that this amendment ensures that consultees views are considered before details are submitted which will facilitate timely determination.

5.1.5 The Applicant has reached an agreed position with the CPA on these matters, which is reflected in Revision 3 of the DCO (Document Reference NCC/GY3RC/EX/048) submitted for Deadline 4. The accompanying Explanation of Changes document discusses the drafting in more detail. In summary it is agreed that the determination period is increased from 6 weeks to 8 weeks, the period within which the CPA may require further information is increased from 21 to 28 days and the provisions relating to deemed approval are retained to ensure a timely determination of such applications, within the expanded determination period. Taking together the changes made in Revision 2 and Revision 3 of the draft DCO, the Applicant considers an appropriate balance is struck between the timely processing of applications under requirement allowing for appropriate time for scrutiny.

Key Issue

5.1.6 On the specific matter of the design of the bridge itself (including elements such as the plant room and control tower), which was discussed at the dDCO Hearing, GYBC wishes to be consulted on the details of the design, alongside the CPA and other relevant bodies.

5.1.7 GYBC understands that, as promised at the dDCO Hearing, there have been subsequent meetings of the Applicant and CPA to discuss the CPA's submissions and that good progress has been made in agreeing changes to the dDCO that could satisfy both parties.

Applicant's Response

5.1.8 Following the Issue Specific Hearing on the draft DCO the Applicant has continued discussions with the CPA. The Applicant has reached an agreed position with the CPA, whereby a new requirement 5 would be added to the draft DCO requiring the CPA's approval of the details of aspects of specified structures (control tower, plant room and the finish and external material of the bridge deck) comprised within the authorised development. The new requirement is included in Revision 3 of the draft DCO, submitted for Deadline 4 and is discussed in greater detail in the accompanying Explanation of Changes document.

6 Marine Management Organisation (REP3-022)

6.1 Key Issues and Applicant's Responses

Key Issue

Issue Specific Hearing 2

6.1.1 (1.4) The MMO referred to the Planning Inspectorate (PINS) Annex B Advice Note Eleven in which it states *'wherever possible…any deemed licence is generally consistent with those issued independently by the MMO'* to support their request that information, such as the project description and conditions that are pertinent to the licensable activities in the marine area, are referenced in the dDML, whether or not the same information is contained elsewhere in the dDCO.

6.1.2 (1.5) Following review of Article 67, the MMO highlighted that the applicant had agreed 20 March 2019 to delete the arbitration clause from the dDML and that Article 67 should be amended to clarify that it is not applicable to the MMO.

6.1.3 (1.6) As well as the applicant, the MMO noted the positive meeting held with WSP before the Issue Specific Hearing 2 commenced. Of the points discussed at this meeting, the MMO highlighted to the Inspector Article 49 (1) (b), which states *'the undertaker may…(b) deepen, dredge, scour, cleanse, alter and improve the bed of the river Yare for the purposes of maintaining the authorised development.'* The MMO suggested that this is amended as the applicant has stated there is no requirements for dredging during the operational phase of the Scheme and any dredging during this phase would be undertaken under the existing Licence L/2016/00376/1 held by Great Yarmouth Port Commission as part of its continuing regime to maintain the navigation.

Applicant's Response

6.1.4 The Applicant can confirm that the deemed marine licence included in Schedule 13 of the draft DCO has not, since submission, included an arbitration provision. In revision 2 of the draft DCO (Document Reference NCC/GY3RC/EX/040, Planning Inspectorate Reference REP3-011) the Applicant included a new condition 20 which excludes the effect of Article 67 (arbitration).

6.1.5 The Applicant does not propose to amend article 49(1)(b) in relation to dredging. This is because, over the lifetime of the Scheme, the possibility of the Applicant being required to carry out dredging cannot be excluded. The

Applicant, as a local authority, is not normally in the business of carrying out dredging Accordingly, Article 49(1)(b) is required to ensure that, should the need arise for dredging to be carried out over the operational lifetime of the Scheme, the undertaker would have an appropriate legal basis for doing so.

6.1.6 The Applicant further notes that it has included, in revision 2 of the draft DCO a new condition 19 (no subsidiary dredging under the Order) which clarifies that the deemed marine licence does not permit any dredging carried out under article 49(1)(b) of the DCO.

6.1.7 Article 49(1)(b) of the draft DCO does not override the requirements of the Marine and Coastal Access Act 2009 which require any person carrying out licensable marine activities to do so in accordance with the terms of a marine licence. The new condition 20 ensures that the deemed marine licence would not authorise such an activity. Therefore, should at a future point a need arise for the Applicant to carry out dredging, it would be required to obtain and comply with the terms of a marine licence. The Applicant is aware of the references to "dredging activities" in conditions 5 and 6 of the deemed marine license and will continue to discuss this, and other matters, with the MMO with a view to reaching agreed conditions.

6.1.8 As is noted in the response operational dredging would continue to be carried out under the existing licence held by Great Yarmouth Port Commission for the foreseeable future of the Scheme.

Key Issue

MMO / WSP 20 November 2019 meeting

6.1.9 (1.7.1) The MMO met with WSP, who represents the applicant, to discuss the dDCO/dDML and Fisheries Memorandum. This meeting was noted in Issue Specific Hearing 2 by both the applicant and MMO. Key comments raised by the MMO are summarised below:

Description of the works:

6.1.10 (1.7.2) Currently the development description terminology differs between Schedule 1 and the dDML. The MMO suggested that work numbers (e.g. Work No. 6A) are referenced in 'Details of licensed marine activities' so it is clear which elements of the development are within the marine area and licensable. It is acknowledged that some work package components will not be listed as they are not within current marine area boundaries or the marine area boundary once the permanent structures have been constructed.

6.1.11 (1.7.3) Design parameters of key components within the marine area should be added to DML, for example total length of sheet piles and number/diameter of tubular piles.

Applicant's Response

6.1.12 The Applicant welcomes the engagement that has taken place with the MMO in progressing all outstanding matters and intends to continue this process with the aim of reaching full agreement.

6.1.13 In response to paragraph 1.7.2 the Applicant acknowledges the desirability of consistency between the descriptions of the authorised development in Schedule 1 and the description of the licenced activities within deemed marine licence contained in Schedule 13, to the extent that such works constitute licensable marine activities. The Applicant is considering revisions to paragraph 3 of Schedule 13 to achieve this objective.

6.1.14 In response to paragraph 1.7.3, the Applicant can confirm that it does not intend to include design parameters within the DML. Such details of what is ultimately construction methodology are not available at this point in the design process and would be unduly constraining at this point in design. The Applicant also notes that it is not at all usual within Deemed Marine Licences within DCOs to include such parameters as it is recognised that such Schemes are at a preliminary stage of design and construction methodology development. The MMO will be able to consider the detailed piling methodology (including matters such as numbers of tubular piles and their diameter) in considering the construction method statement that is presented to them pursuant to the DML.

Key Issue

Dredging:

6.1.15 (1.7.4) The MMO suggested that articles/paragraphs from dDCO/dDML that infer the undertaker can undertake capital dredging activities that will result in disposal to sea and/or maintenance dredging, for example Article 49 (1) (b) of the dDCO, should be amended or deleted.

Applicant's Response

6.1.16 Please see paragraph 6.1.4 (the response to paragraph 1.6). The Applicant has carefully reviewed the operative provisions of the draft DCO and remains of the view that references to dredging within it, are required, for the reasons outlined in its response above. The Applicant notes that should such dredging activities be required, they would require a new marine licence and the Applicant is continuing to discuss the terms of the deemed

marine license with the MMO with a view to reaching agreement on its terms.

Key Issue

Written Scheme of Investigation (WSI):

6.1.17 (1.7.5) The MMO understands that the WSI has been agreed with Historic England in principle and that archaeological investigations (core samples) will be undertaken within the marine area. Although it is stated elsewhere within the dDCO, Schedule 2 Part 1 Article 13 (1), that the authorised development must be constructed in accordance with the archaeological WSI, the MMO suggest compliance with the WSI is conditioned in the dDML. As detailed above, any deemed licence should be consistent with those issued independently by the MMO.

Applicant's Response

6.1.18 The Applicant confirms that it is considering the suggested amendment to the deemed marine licence.

Key Issue

Monitoring:

6.1.19 (1.7.6) Within the Fisheries Memorandum the applicant has proposed to monitor underwater noise levels throughout the in-river piling activities. The MMO are yet to advise whether underwater noise monitoring is necessary. Any agreed monitoring associated with works in the marine area will need to be conditioned in the dDML.

Applicant's Response

6.1.20 The commitment to monitoring has already been made by the Applicant within the updated Outline Code of Construction Practice submitted at Deadline 3 (Document Reference NCC/GYTRC/EX/043, Planning Inspectorate Reference REP3-014), compliance with which is secured by Requirement 5 of the draft DCO. No further changes are therefore required to the DML.

Key Issue

MCMS

6.1.21 (1.7.7) Returns (notices) are processed via the MMO's Marine Case Management System (MCMS). The MMO has asked the applicant to define

MCMS in the interpretation section of dDML and replace 'email' with 'MCMS' in Part 1 Article 2 (3) of the dDML.

Applicant's Response

6.1.22 The Applicant confirms that amendments of equivalent effect have been incorporated into the Deadline 3 dDCO (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010).

Key Issue

Navigation conditions

6.1.23 (1.7.8) The inclusion of navigation conditions were discussed, however the applicant assured the MMO navigational considerations have been addressed elsewhere in the dDCO, for example Part 6, and Part 7 Article 63 protects the rights, duties, and/or privileges of Trinity House.

6.1.24 (1.7.9) It was noted in Issue Specific Hearing 1 that navigation of the river Yare will be temporarily suspended on up to three occasions for a maximum of 72 hours. The dDML currently includes a sub-condition (Part 2, 4 (1) e) to issue a notice to mariners (NtM) 10 working days prior to commencement of works. The MMO suggest that an additional sub-condition is added to the dDML requiring the licence holder to issue a notice to mariners 21 days prior to navigation of the river Yare being suspended.

Applicant's Response

6.1.25 The Applicant is considering the MMO's suggested condition. At this stage the Applicant is not clear the basis upon which the proposed condition relates to the carrying out of the marine licensable activities that would be authorised by the deemed marine licence. The suspension of public rights of navigation is not a marine licensable activity in itself and, as noted in the representation, the conditions of the deemed marine licence already provide for notice to be given of the commencement of those activities.

6.1.26 The Applicant notes that matters relating to the safe navigation of the River Yare are predominately a function that rests with the GYPC and further notes that Article 23 already includes comprehensive provisions governing the publicity that must be carried out prior to temporarily suspending public rights of navigation. The Applicant intends to discuss this matter further with the MMO with a view to reaching an agreed position.

Key Issue

Comments on LIRs

6.1.27 (2.1) The MMO reviewed the two separate LIRs submitted by Norfolk County Council and Great Yarmouth Borough Council. The MMO has no significant concerns to raise. It is noted that Norfolk County Council have also recommended that the applicant considers specific species (River lamprey, European eel, Smelt) further in the ES. The MMO have requested a more detailed description of migratory fish in the river Yare and appropriate assessment of underwater noise and vibration impacts. The applicant has provided Fisheries Memorandum (version 3) 25 November 2019 which the MMO are currently reviewing.

Applicant's Response

6.1.28 The Applicant notes and agrees with the position noted by the MMO and welcomes their recent meetings around fisheries. These meetings have included discussion of the results of further literature reviews which have indicated that there may be migratory fish present within the River Yare. The discussions acknowledged that the extent and duration of migratory fish presence at any given time could only be a snapshot of conditions, the anticipated construction programme and the existing mitigation measures for fish are already contained within the draft DCO and Outline CoCP submitted as part of the Application. In response to the discussions the Applicant included a number of additional mitigation measures in respect of migratory fish to account for their potential presence during the period of construction in the Outline CoCP (Document Reference NCC/GY3RC/EX/043, Planning Inspectorate Reference REP3-014) submitted at Deadline 3. These measures were summarised in the fisheries memorandum referred to by the Marine Management Organisation. The Applicant continues to engage with the Marine Management Organisation to ensure that they are content that the existing and additional mitigation measures proposed in the memorandum are appropriate in respect of fisheries.

Key Issue

Comments on responses to the ExQ1

6.1.29 (3.1) The MMO has reviewed other IPs responses to the ExQ1 and have no significant observations or concerns to raise.

Applicant's Response

6.1.30 The Applicant notes MMO's response.

Key Issue

Revised/updated SoCG (if any)

6.1.31 (4.1) As detailed in section 1 the MMO has proposed further changes to dDML. These amendments are to be recorded in the MMO SoCG. The SoCG contained in Appendix J of Document NCC/GY3RC/EX/021: Statement of Commonality for Statements of Common Ground at Deadline 2 needs to be updated.

Applicant's Response

6.1.32 The Applicant is preparing an update to the SoCG which will be issued to MMO for their agreement.

Key Issue

Comments on any additional information/submissions received by D2

6.1.33 (5.1) The MMO has reviewed Document NCC/GY3RC/EX/016: Responses to Written Representations, dated 22 October 2019. Since these comments were submitted the MMO and WSP have had a further conference call (15 November 2019) and a meeting (20 November 2019) to clarify the comments in our Written Representation and discuss additional comments above. The following is an update on the MMO Written Response comments/D2 applicant responses and a summary of comments that are under discussion.

Draft DML / DCO

6.1.34 (5.1.1) As detailed in section 1, the MMO suggests the following changes are made:

- To the dDML increase the accuracy of the licensable works in the marine area and align with the development description elsewhere in dDCO; add development design parameters; add temporary suspension of navigation NtM sub-condition; add WSI compliance condition; replace reference to 'email' with 'MCMS';
- To the dDML and dDCO amend or delete dredging articles/paragraphs as necessary.

Applicant's Response

6.1.35 Please see responses at paragraphs 6.1.4 to 6.1.8, 6.1.13 to 6.1.14, 6.1.18, 6.1.22 and 6.1.25 to 6.1.26.

Key Issue

Licensing requirements

6.1.36 (5.1.3) As detailed in section 1, it is suggested, in the dDML, that the accuracy of the licensable works in the marine area is improved and aligned with the development description elsewhere in dDCO.

Applicants Response

6.1.37 Please see response at paragraph 6.1.13. The Applicant is considering revisions to paragraph 3 of Schedule 13 to achieve this objective.

Key Issue

Fisheries and Underwater Noise

6.1.38 (5.1.5) The MMO clarified to the applicant the information that is outstanding in writing (14 November 2019). This was discussed on a conference call 15 November 2019 and during a meeting with WSP 20 November 2019. In response, the applicant has provided Fisheries Memorandum v3 which is currently being considered by the MMO to determine if it addresses all fisheries comments.

Applicant's Response

6.1.39 The Applicant notes and agrees with the position noted by the MMO and further details with regards to the fisheries memorandum are provided in the Applicant's response to 2.1 at paragraph 6.1.28.

Key Issue

Coastal Processes

6.1.40 (5.1.6) The MMO discussed coastal processes comments on a conference call 15 November 2019. The applicant confirmed that they will provide a comparison between climate change flow velocities and those used in the day one scenario model. This should demonstrate that the sediment model presented would remain valid under the climate change scenario for the lifespan of the bridge.

Applicant's Response

6.1.41 The Applicant can confirm that a technical memorandum has been produced and sent to MMO for their review and consideration. This technical memorandum seeks to demonstrate that the sediment model will remain valid under the climate change scenario and it is hoped will allow this matter to be resolved with the MMO.

Key Issue

Historic England

6.1.42 (5.1.7) As detailed in section 1, the MMO suggest compliance with the WSI is conditioned in the dDML.

Applicant's Response

6.1.43 As noted earlier in this document, the Applicant is giving further consideration to the suggestion that compliance with the archaeological written scheme of investigation is conditioned under the deemed marine license, in addition to the requirement in Schedule 2.

Key Issue

Natural England

6.1.44 (5.1.8) The MMO has discussed with Natural England (NE) their concerns/comments regarding the proposed GYTRC. The MMO does not deem it necessary to include any further conditions in the dDML, however will consult NE on method statements submitted to the MMO.

Applicant's Response

6.1.45 The Applicant welcomes the MMO's confirmation that it is does not consider it necessary to include any further conditions in the dDML (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010) in respect of Natural England and that it will consult with Natural England on the method statements submitted.

Key Issue

Changes to scope of development

6.1.46 (5.1.9) The applicant has assured the MMO that it is unlikely the scope of the development will be amended. Should any changes be made these will need to be included in the dDML.

Applicant's Response

6.1.47 The Applicant acknowledges MMO's comment.

Key Issue

Impacts on river access

6.1.48 (5.1.10) The MMO notes the applicant is working with IPs to address concerns regarding impacts on river access during the construction and operation phases of the development. As detailed in section 1, the MMO suggest an additional NtM sub-condition regarding the temporary suspension of navigation during the construction phase. The MMO has no further comments regarding impacts on river access.

Applicant's Response

6.1.49 Please see response at paragraph 6.1.25 to 6.1.26.

Key Issue

Environment Agency

6.1.50 (5.1.11) The MMO has discussed with Environment Agency (EA) their concerns/comments regarding the proposed GYTRC and are aware some remain outstanding. The MMO does not deem it necessary to include any further conditions in the dDML, however will consult EA on method statements submitted to the MMO.

Applicant's Response

6.1.51 The Applicant welcomes the MMO's confirmation that it is does not consider it necessary to include any further conditions in the draft DML (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010) in respect of the Environment Agency's comments and that it will consult with the Environment Agency on the method statements submitted.

7 Michael Boon (REP3-023 and REP3-024)

7.1 Key Issues and Applicant's Responses

Key Issue

HR Wallingford Hydraulic Model

7.1.1 I am experienced with the process of commissioning hydraulic models within the Port Authority jurisdiction within the river port and outside in the area of the outer harbour from my experience on watch as Chief Executive of the Port Authority in the case of utilising my commissioned previous models from HRS Wallingford and the Delft University in the Netherlands. I have noted that the Port Authority and the Port Company have quite correctly raised their own concerns about some of the model transits of vessels through a new bridge with a narrowed navigational channel. From my own experience of such models I share this concern and will be interested to see how these concerns are alleviated. I believe that the Port Authority, the Port Company and Peel Ports are collectively the proper parties to resolve this issue, since navigation has primacy in any construction scheme and these bodies will be looking to secure safe navigation for its users with regard for any new structure placed in the river.

Applicant's Response

7.1.2 The Applicant can confirm that discussions with both GYPC and GYPA are on-going in respect of the Scheme, a SoCG for both parties is included within the Examination submissions (latest versions within Statement of Commonality for Statements of Common Ground (Document Reference NCC/GY3RC/EX/034, Planning Inspectorate Reference REP3-005)).

Key Issue

Berthing arrangements for incoming commercial vessels

7.1.3 I share the Port Authority's and Port Company's concerns on this and I do not think that the applicants have provided a satisfactory scheme at the present time. This is the point I had raised on a number of occasions with the applicants during consultation with the past months. During the construction of the Breydon Bridge, on my watch, a proper piled and dedicated berthing facility, not affecting operational quays, was constructed up river of the bridge itself. In the current circumstances I would feel it is necessary to construct a dedicated waiting berth in a proper and safe position to deal with the new proposed bridge transits as requested by the Port Authority and Company interests. As far as I can see at the present time, having raised

this point some considerable time ago, it does not appear from the evidence given at the last hearing that this is yet been satisfactorily agreed. The earlier proposals by the applicants, even having taken account of its navigation adviser, disclosed a lack of knowledge on the operation the port and the river regime. I noted the Group Harbourmaster's comments about risk assessment for passage of vessels coming in by sea. If a safe passage was demanded and it was necessary that the bridge be raised before the vessel entered the port as this was the only safe way of proceeding that this would be a proper and safe attitude to take. This would occur have direct implications on the lifting times of the bridge and consequent road traffic disruption which I will refer to later.

Applicants' Response

7.1.4 The Applicant can confirm that discussions with both GYPC and GYPA are on-going in respect of this aspect, SoCG's for both parties are included within the Examination submissions (latest versions within Statement of Commonality for Statements of Common Ground (Document Reference NCC/GY3RC/EX/034, Planning Inspectorate Reference REP3-005)). The Applicant notes that details of the discussions around inbound vessels is contained in their Written summaries of oral submissions made at Issue Specific Hearing 1 on the Effect on Port Operations (ISH1: 19 Nov 2019) (Document Reference: NCC/GY3RC/EX/036, Planning Inspectorate Reference REP3-007).

Key Issue

Passage of vessels through bridge

7.1.5 I noted, from the users present, at the meeting concerns expressed as to how recreational vessels and commercial vessels would pass through the bridge on either an opening on demand, in the case of commercial vessel and also requested openings in the case of recreational vessels. This is entirely a matter for the Port Authority and the associated navigation interests and any bridge would have to lift in accordance with the port's needs. During the discussion there were scenarios of various types of passage raised and I noted one that postulated recreational vessels passing through the bridge opening first followed by a commercial vessel. If an up river passage took place at the time of a heavy ebb tide, and it was suggested that the recreational vessels would pass through the navigational channel slowly to be followed safely by a commercial vessel it was suggested that the passage time would be likely to be considerably in excess of the five-minute raising and lowering of the bridge put forward by the applicants. This again would have implications on the road traffic position. As navigation has priority the lifting and raising of the bridge would be properly in the hands of the Port Authority and collective bridge lifts

appears to be planned to be controlled from a control centre at the new bridge. I would like to see the outcome of further discussions on the implication of bridge lifting times, having heard these points raised in.

Applicant's Response

7.1.6 The Applicant can confirm that discussions with a number of parties are on-going in respect of this aspect, SoCG's for those parties are included within the Examination submissions (latest versions within Statement of Commonality for Statements of Common Ground (Document Reference NCC/GY3RC/EX/034, Planning Inspectorate Reference REP3-005)). The DCO is drafted to ensure that commercial navigation has primacy and that management of navigation and navigational safety remain with the Statutory Harbour Authority.

7.1.7 The five minutes operational time is a long-term average used in the economic assessment, the traffic assessments used a range of opening durations to simulate various vessel transit conditions. The results from the traffic assessments are fully documented in the Transport Assessment (DCO Document Reference 7.2, Planning Inspectorate Reference APP-189). As shown in Plates 7-11 and 7-12 of the Transport Assessment, the results of the assessment demonstrate that the forecast maximum queues associated with the modelled bridge openings can be accommodated without blocking back to adjacent junctions.

Key Issue

Potential failure of lifting bridge and its implications on river traffic

7.1.8 In the case of the bridge not operating properly in lifting and lowering as a result of some fault and the new bridge's positioning significantly further down the river Yare than any other constraints on navigation it would appear that the bridge would have to remain in the opening position to respect navigational priority if there were difficulties in lifting it. I heard the explanations given at the meeting the first time by the applicant of the backup systems of electrical alternative lifting mechanisms and the use of a generator. This appeared to be the best scenario put forward to try and alleviate any electrical failure of the main lifting system. However, during my extensive discussions with the applicants, I was told that the contractor for the bridge would be compelled as a condition of the contract to guarantee the ability of being able to lift the bridge in one hour should it fail. I'm not convinced yet that this is a viable proposition and obviously this is something of great concern to the navigation interests. Having heard the explanation of the backup electrical lifting system for the first time I shall be seeking further information from the applicant, I would add to the points made by Alan Goodchild, referring to the time on my watch at the Port Authority when the

Breydon Bridge, whose construction with the DOT I had negotiated, had been in a similar position about how quickly failures would be alleviated. At the time part of the agreement for the construction of the Breydon Bridge was a guarantee from the DOT that spares. which would be crucial to any mechanical failures, would be instantly on hand and would be able to be fitted quickly to restore the operation of the lifting bridge. The Breydon Bridge in its position above the Haven Bridge at the entrance to Breydon water becoming out of order and needing to be repaired was not quite so crucial for commercial 3 vessels as a number though relatively few went up and down river to Cantley and to Norwich in my time and an interruption to navigation could be more easily planned. However, the failure of a mechanical part did take place and there was no spare available and the unit had to be especially machined and as a consequence the agent Breydon Bridge was out of action for a considerable period of time. This was the point I was trying to make at the last hearing which needs to be addressed. It is considerably more crucial in the in the question of the construction of a downriver bridge in the heart of the commercial operations.

Applicant's Response

7.1.9 As identified in response to Issue Number MP3 in the Applicant's Response to Relevant Representations (Document Reference NCC/GY3RC/EX/008, Planning Inspectorate Reference REP1-002) the Applicant has outlined a number of measures in the Scheme design that are intended to reduce the potential of a Third River Crossing failure impacting marine operations.

7.1.10 Schedule 14 of the draft DCO includes a provision, at paragraph 70, which states that on a failure to operate, the bridge is to be kept (so far as practicable) in the raised position, so as to allow vessel passage. The bridge has been designed with tail locks which allow the bridge to be secured to the bascule abutment in the open (to navigational traffic).

7.1.11 In its response to Written Representations (Document Reference: NCC/GY3RC/EX/016, Planning Inspectorate Reference REP2-002) the Applicant outlined the general considerations incorporated into the bridge design with regard to a Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) failure. In its response the Applicant stated:

"The potential of the bridge to fail in operation due to a Mechanical, Electrical, Instrumentation, Control and Automation (MEICA) fault has been considered in the development of the design of the bridge. In the event of a MEICA failure, there are "backup systems" and redundancy to enable the bridge to maintain operation. The bridge is designed to operate in three basic modes:

- *Automatic mode;*

- *Manual mode – step-by-step control by an operator;*
- *Manual maintenance mode – step-by-step control by trained maintenance operator with protective sequence interlocks.*

The bridge is also designed to include an emergency operation mode, for application when the operator considers an emergency has arisen under the Standard Operating Procedures. When this emergency operation mode is activated, the bridge and its mechanisms will stop in a controlled manner under the actions of the hydraulic system. Manual emergency operation will be subsequently allowed to return the bridge to the closed position.

Once the bridge is in the closed position, either as a result of any emergency stop or other fault conditions during operation, procedures "back-up systems" mentioned above will allow the bridge to operate under supply fault conditions as follows:

- *Standby power facilities diesel generator sets shall be permanently installed in the east and west bascule piers. In the event of a main power failure during bridge operations, the standby generator sets shall start automatically. In addition, a portable generator connection facility shall provide an alternative emergency standby power supply in the event of a mains power failure and standby generator failure.*
- *Multiple hydraulic pumps such that the bridge can be opened in the event a pump fails or is removed to be serviced.*
- *Multiple hydraulic cylinders such that the bridge can be operated in the event a cylinder fails or is removed to be serviced.*
- *Operation of the bridge under reduced number of actuators (cylinders) – under the accidental condition of the failure of one or two actuator(s), it will be possible to move the bridge to the open or closed position as deemed necessary.*

7.1.12 With regard to the *specific* question about the bridge opening within 1 hour of failure the Applicant notes that the design will allow for:

1. Operation under Reduced Number of Actuators - Under the accidental condition of the failure of one or two actuator(s) (hydraulic cylinder), it shall be possible, after an assessment of the condition of the failed actuator, to recover the bridge to the closed position using the remaining actuator(s). The bridge shall not be opened under the condition of failure of one or more of the actuators unless the bridge is operated in an emergency/maintenance mode. The bridge shall be rendered operable again and thus be fully open within one hour of any failure of the operating system occurring other than any failure resulting from damage caused by a bridge strike. Subsequent

operability will depend on the level and type of damage caused by the bridge strike.

2. Redundancy within the Hydraulic System - The design must allow for the limited continued operation should one of the pump/motor sets be out of commission. Continued limited operation means at a reduced speed and/or reduced operational wind speed. A connection point for an emergency standby diesel powered Hydraulic Power Unit (HPU)shall be provided which shall be sized such that the bridge can be fully open within 1 hour of connection of the standby HPU.

Key Issue

Bridge lifting times and effects on traffic flows

7.1.13 The effect on my observations on traffic flows and congestion of road traffic following current bridge lifts seem to be at odds with the traffic models explained at the last hearing. There seem to be a view expressed by the applicant that after the new bridge had lifted for a five-minute period all road congestion would then be eliminated back to a 'normal' flow in another five minutes. This has not been the experience of the town and in what I've observed during the summer of 2019, even taking account of the late autumn roadworks on Southtown Road, which caused further problems. The summer traffic congestion has resulted from nose to tail traffic on the western bypass, stretching back to considerably beyond the Harfreys roundabout in Gorleston, being exacerbated by the lifting of the Haven and Breydon bridges even this though these lifts had been timed to avoid peak traffic flows. The fact that the new bridge crossing will be further down river means that the Port Authority will need to lift it more regularly in the interests of the passage of vessels. The current estimate is 15 times a day. I've already made the point, arising out of the last hearing, that the passage itself, which is under n control of the Port Authority and could take considerably longer to ensure safe transits which would be more than the five minutes planned by the applicant. This would have a knock-on effect of the clearance of the traffic close by the lifting of the bridge. In addition to this in discussions with the Highway Agency I gather that it is currently reassessing traffic flows on the bypass following its earlier assessment and the remodelling of the roundabouts. This of course was the base modelling information which was taken by the applicant to consider traffic flows in a consideration of the installation of a further bridge together with a turn across the bypass on a comparatively short approach with regard to the construction of the new bridge. I think a clear explanation is necessary at the present time as to how the practical traffic flows experienced in Great Yarmouth will be catered for by the remodelled roundabouts and then as a consequence how those flows would be dealt with by the necessity and consequences of lifting the new bridge.

Applicant's Response

7.1.14 It should be noted that, in line with the Department for Transport's (DfT) WebTAG guidance, the modelling and economic appraisal of the Scheme takes into account the Highways England schemes at Vauxhall and Gapton Hall roundabouts which are included in their Preferred Route Announcement (PRA). This is fully documented in the Transport Assessment (Document Reference 7.2, Planning Inspectorate Reference APP-189) and the Economic Appraisal Report (Document Reference 7.6, Planning Inspectorate Reference APP-200).

7.1.15 A comprehensive traffic modelling exercise has been undertaken in line with DfT WebTAG guidance, as detailed in the Transport Assessment (Document Reference 7.2, Planning Inspectorate Reference APP-189). The scope of the assessment was agreed with the local highway authority prior to submission and has subsequently been reviewed by Highways England. In the Statement of Common Ground with Highways England (Document Reference NCC/GY3RC/EX/021, Planning Inspectorate Reference REP2-007), it is recorded that:

"HE and NCC agree that the SATURN and Paramics are suitable tools to assess the impact of the Scheme on the trunk road network" and;

"In view of the assessed impacts, it is agreed that the strategic road network can accommodate the impact of the Scheme with the proposed mitigation".

7.1.16 Norfolk County Council continue to work closely with Highways England as they continue to develop their plans for the Vauxhall and Gapton Hall roundabouts.

7.1.17 It should be noted that, in line with DfT WebTAG guidance, the modelling and economic appraisal has been undertaken for a "neutral" weekday rather than for the summer period and does not take account of temporary changes in traffic patterns due to roadworks. The number, timing and durations of bridge openings has been calculated based on several years of vessel data provided by the Port Authority. The Paramics modelling incorporates bridge openings of varying durations, of which the average is 5 ½ minutes. It is acknowledged that there may be occasions when the bridge will be required to open for longer periods to enable the safe passage of larger vessels, however it would not be appropriate to assess the Scheme on the basis of these infrequent events.

Key Issue

Restriction of the tidal flow by the construction of the bridge

7.1.18 The question I raised at the last hearing as the effects of the profile of the new proposed bridge restricting the tidal flow and its effect upon the town in conditions of high and surge tides was not answered satisfactorily. I don't think the response of the applicant at the hearing that the Environment Agency has this in hand is an adequate answer for those of us who live in the area without more information. I do not know whether the hydraulic model is sufficiently adaptable as to deal with this problem but it could be if in fact its scope covers the area river from the proposed bridge to the harbour entrance. I have observed over a number of years the local peculiarity of the narrow-piled river receiving one floodtide, not receiving an adequate ebb, and then receiving another floodtide on top of the first one causes overtopping of the river on the West Bank. The figures given at the last hearing for the constriction of flow by the 4 construction of the bridge were variously mentioned at 36% and 40%. I feel that this situation requires the Environment Agency to thoroughly investigate the effects of the throttle caused by the construction of the bridge and provide adequate answers since I know from my watch at the Port Authority, having participated in their construction, that the flood defences on the west bank of the river are now low and vulnerable.

Applicant's Response

7.1.19 The Applicant acknowledges that Great Yarmouth has a history of documented flood events with the main source being tidal surges. As noted in Paragraph 4.9.2 and 6.2.9 of the Flood Risk Assessment (Environmental Statement - Appendix 12B (Document Reference 6.2, Planning Inspectorate Reference APP-135)) the modelling which underpins the assessment included the 5th and 6th December 2013 tidal surge event. The event caused widespread flooding due to a tidal surge in the North Sea. The surge, combined with the high tide, tracked down the east coast of England caused damage to properties near the coastline. Due to the size of the 2013 event, and its relatively recent occurrence, the Applicant was able to draw on a range of data and anecdotal evidence for the event and has included this in the modelling.

7.1.20 With regards the assessment in relation to flood risk the Applicant would like to refer Mr Boon to the Flood Risk Assessment. The Flood Risk Assessment presents a robust assessment which was informed by hydraulic model appropriate to the Scheme. With specific regards to the effects throttling the hydraulic model accounts for the throttling effect and the resulting impact on water levels upstream of the Scheme. Tables 6.9 and 6.11 in the Flood Risk Assessment provide the changes in water level as a result of the Scheme for

the 200 year and 200 year plus climate change events. These results show that the general effect of the Scheme in the channel is to increase water levels south of the Scheme and decrease north of the Scheme. This is because of the constriction in the channel caused by the knuckles used to support the Scheme. This reduces the overall capacity of the channel between the supports, slowing the flow rate through the area and reducing the amount of water that can transit up the channel from the tidal boundary. As outlined in Table 6.3 of the Flood Risk Assessment the reduction in water level at the upstream limit of the model (US1) is minor for the 200-year event and therefore there is no risk of freshwater flooding of higher reaches within the Broads basin as a result of the Scheme.

7.1.21 The Applicant would welcome further engagement with Mr Boon to explain the approach undertaken in the Flood Risk Assessment submitted as part of the Application.

Key Issue

7.1.22 The effect of the bridge construction on the need to protect the rail alignment to the port on the east bank of the river.

7.1.23 During discussions with the applicant, the Norfolk County Council, I mentioned the fact of the existence of the long-protected rail alignment on the east bank to ensure if necessary, a future construction of the line between the outer harbour itself and the Vauxhall rail station. I was told by the applicants that this could be accommodated within the roundabout arrangement on the east bank of the river.

7.1.24 At the hearing I was rather alarmed to hear the applicants now state that they could not find any evidence of the planned a long-standing rail alignment within the Borough's own Borough Wide Local Plan of 2003. I know from my watch that this alignment had been protected for many years and also that the Great Yarmouth Borough Wide Local Plan is currently under review. In this situation opportunities are not lost.

7.1.25 I carried out some further investigation in this respect and I understand as a condition of the European Grant which was made by the Commission being the key financial point to enable the construction of the outer harbour which I planned was that a rail study within the peninsular at Great Yarmouth was a condition of the award. I understand that a study of the practicality of a rail alignment from the outer harbour itself along the existing protected alignment on the east bank of the river was carried out by a grant from the European Commission supported by contributions from the Norfolk County Council, the Great Yarmouth Borough Council and the Great Yarmouth Port Authority. This is in the time when the first company to develop the outer harbour was Eastport under the chairmanship of Sir Richard Jewson. The study itself was

carried out by a Norfolk County Council officer. I was very alarmed that I have not managed to locate a copy of this key report at the present time despite having asked for from the applicants following the hearing. Following the meeting on 19 November 2019 I mentioned to the applicant that the report needs to be located within its own offices to confirm the protection of the alignment in the construction of the roundabout on the east bank during the planned construction of the bridge as it had been previously stated was possible. I have heard nothing further.

7.1.26 Communications to ports on a multimodal basis are extremely important as I know from my past life serving on national UK and European port committees. Great Yarmouth Borough Council has just entered the beginnings of a cultural relationship with a number of key European ports which as a consequence may also may provide trading opportunities in due course. In these circumstances there is a need to protect that the rail alignment for the future and I feel that this is essential. Most of the major ports in the Baltic and in Western Europe with whom Great Yarmouth may resume an opportunity for trading in the future, with whom they traded in the past, and also after post Brexit are rail connected. On my watch as Chief Executive of the Port Authority I particularly travelled to the North German ports and in 5 particular Lübeck in North Germany and observed in this instance how the rail lines ran within the road itself and the Lübeck Port Authority ensured that any movement at out of hours' time did not disturb the flows of road traffic. This was the significant practical solution of a rail connection from the outer harbour to the railhead in Great Yarmouth. In my experience I think this is a strategic point looking at how rail connections from the ports, when in an age of planned carbon reductions on climatic protection grounds, rail will become a significant mode of transport from the European ports. In these circumstances I would not wish the port and town of Great Yarmouth to lose the opportunity of being able to move with the times at the appropriate moment. The alignment needs at least protection, within the period in future years, when it may be required in the planned construction of the current proposed bridge crossing works.

7.1.27 This I was given to understand can be accommodated in the construction of the bridge and its associated roadworks works as confirmed by the applicant, the Norfolk County Council, and needs to be done, in my view, strategically to protect the future interests of the port of Great Yarmouth.

7.1.28 At short notice I've obtained to reports on multimodal transport, one from Europe and one of the United Kingdom which I have now passed both to the Port authority and Company and to applicant and I would be pleased to pass on to the Inspector if he so wishes as well. These indicate a strategic position for the future with regard to the rail port transport mode.

Applicant's Response

7.1.29 The Applicant has outlined its position in Sections 16.1.102 to 16.1.104 of its document 'Response to Written Representations (Document Reference NCC/GY3RC/EX/016, Planning Inspectorate Reference REP2-002).

Key Issue

Further discussions and explanations.

7.1.30 I have had no discussion with the applicant, the Norfolk County Council for many months since it issued some general rebuttals to the points I had made during our previous discussions. I understand that the applicant would be prepared to have further discussions on the points I feel that the not yet satisfied and I would welcome an invitation on the elaboration of meaningful response to my views.

Applicant's Response

7.1.31 The Applicant would welcome further engagement with Mr Boon and is in the process of arranging a meeting with him to discuss his points further.

8 Royal Yachting Association (REP3-025 and REP3-026)

8.1 Key Issues and Applicant's Responses: RYA's Narrative Case for Accompanied Site Inspection

Key Issue

1. Drive across Breydon Bridge

View Waiting Pontoons

8.1.1 (i)The viewed small waiting-pontoon serves both Breydon and Haven bridges.

8.1.2 (ii)The waiting pontoon is situated remote from the point-of-risk which lies at the bridge itself

8.1.3 (iii) By situating new waiting pontoons immediately alongside the new bridge, risk of collision with passing vessels and current-effect from passing vessels are increased as they manoeuvre through the opening

a) Required possible use of bow-thrusters by passing vessels will provide a sideways force at least equal to that of a collision, or greater for steering back onto intended track;

b) Vessels passing against a stream and constrained through harbour laws, to speed-over-the-ground may actually travel through the water at <12-knots (max permitted s.o.g. + opposing water current); this will cause considerable vessel wake, resulting in consequential Yaw, Veer and Surge on any moored boat; in turn stressing mooring lines and fixtures

8.1.4 **(iv) Mitigation** of the risks could be effected by situating waiting-pontoons remotely from the bridge piers

8.1.5 Response at TR010043 (Applicant's 7.5T (RYA)), Table 5.1 Ref.3, that

a) Pontoons at 50m should be long enough to provide flexibility for boats to moor in best/safest position away from the bridge,

b) in principle for a larger flotilla of boats the operator would arrange an immediate separate opening.

8.1.6 Response is considered acceptable.

Applicant's Response

8.1.7 The Applicant acknowledges RYA's comment, this issue and position is as stated in the current SoCG (Appendix K of the Statement of Commonality (Document Reference NCC/GY3RC/EX/034, Planning Inspectorate Reference REP3-005 item 3 of Matters under Discussion)).

Key Issue

2. Bridge Crossing Point

Evidence of Narrowing

8.1.8 (i)The ~88m river-width will be reduced to ~56m between bridge-piers

8.1.9 (ii) The buttresses

Applicant's Response

8.1.10 The Applicant has no comment on this statement.

Key Issue

3. Drive Across Haven Bridge

Evidence of Water Current

8.1.11 (i) The Applicant at TR010043-000738 (NCC/GY3RC/EX/029 pNRA), Appendix D, Art. 5.1 &5.2 states that peak flow rates of 4–5 knots can be experienced; that with a bridge-piers narrowing these rates may increase 60% or more (up to anticipated 8 knots).

8.1.12 (ii) The flow viewed at Haven Bridge during ASI was estimated at <2 knots, but was nevertheless very evident.

8.1.13 (iii) Such flows will provide considerable risk to boats approaching or departing the waiting pontoons, since the velocity gradient between full flow in the stream and zero in current-lee of buttress, all within the hull length of the boat will provide unpredictable conditions.

8.1.14 **(iv) Mitigation** of the risk is addressed in exactly the same manner as #iv above (#a long enough pontoon to allow single boats ample manoeuvring space and #b the anticipated operating regime for larger flotillas would arrange an early additional opening).

8.1.15 Response will be considered; The Applicant will arrange a HAZID session for harbour users including the Harbourmaster [TR010043 pNRA, Table 5.1, Ref.4], to date January-2020.

Applicant's Response

8.1.16 The Applicant notes RYA's comments and confirms that a pNRA HAZID workshop to include port and river users will be arranged and these specific risks will be considered in further detail.

Key Issue

Evidence 3- Span nature of Haven bridge

8.1.17 (i) The free-standing two piers at Haven Bridge provide ~24% restriction to current-flow.

8.1.18 (ii) The buttress piers at the new bridge will reduce river-width from ~88m to ~56m between buttresses, approximately ~36% restriction.

8.1.19 (iii) If the new bridge were designed in similar manner as a 3-span construct, flow rates would likely not be impacted as much.

8.1.20 (iv) Mitigation is not offered, save that the initial dimension assessments were based on cost.

Applicant's Response

8.1.21 The level of flow constriction imposed by the scheme is presented in Appendix 11C to the ES Vol 2 (Document Reference 6.2, Planning Inspectorate Reference APP-130), this shows that under normal tidal conditions velocities through the bridge passage would not be significantly higher than those at Haven bridge as the cross sectional area of the river channel at Haven is less than that at the Scheme location.

8.1.22 The initial selection of Navigation channel width was undertaken in consultation with the Statutory Harbour Authority, it should be noted that GYPA/GYPC have confirmed that the navigation channel width is suitable for all vessels using the river.

8.2 Key Issues and Applicant's Responses: Narrative Case for Issue-Specific-Hearing (ISH-1) (Effect on Port Operations)

Table 8-1 Key issue and Applicant's Responses: Narrative Case for ISH-1

Item	pNRA	Key Points quoted from pNRA		RYA's Comment	Applicant's comment
1	2.2.5	The River Yare also provides access to the Norfolk Broads for recreational vessels via Breydon Water. These vessels have to pass two existing lifting bridges, the Haven Bridge and the Breydon Bridge, during a passage between the sea and the Broads.	The River at Gt.Yarmouth is the only natural outflow from The Broads. The older Haven Bridge is subject to frequent breakdown preventing vessels passing. The newer Breydon bridge has higher air-draft and does not pose as large an issue.	With a new bridge at only 4.5m air-draft, many craft will experience triple delay for passage between Broads and Sea	The Applicant has confirmed (see issue number MP13 of the Applicant Response to Relevant Representations (Document Reference NCC/GY3RC/EX/008, Planning Inspectorate Reference REP1-002) that due to highway alignment constraints it is not practical to design the scheme at a higher elevation, the Applicant are working with GYPA to facilitate an operational method that minimises this potential delay through coordinated openings.

Item	pNRA	Key Points quoted from pNRA		RYA's Comment	Applicant's comment
2	3.2.1 & 3.2.6 & 3.2.10	In order to ensure a robust risk assessment process Navigation Risk Assessment workshops have been held to which the principal marine stakeholders were invited.	Neither RYA nor any other small-boat stakeholders were invited to workshops in March or September 2019.	The Risk Assessment without widest participation cannot be considered "Robust".	The Applicant has confirmed the RYA and other interested parties will be invited to attend during the next update to the pNRA, anticipated to be January 2020. The level of participation required to ensure a robust assessment is not mandated under the Marine Safety Management Code, it is common practice for the risk assessments to be conducted by a small group with the outputs then reviewed by the wider navigational community.
3	4.5.8	Vessels with projections … are at greater risk when passing through	Bridge fendering shown as individual cones	Yachts in particular are at risk of catching rigging on individual fenders; Continuous fenders would provide mitigation	The Applicant notes that the benefits of continuous fendering in the bridge passage was identified in the vessel simulation reports and will be taken forward during the scheme detail design. The pNRA will be updated to explicitly reflect this.
4	4.5.11	Changes to the patterns of current flow	Boats will be expected to moor at waiting-	Boats mooring close to buttresses may in time	The sediment transport assessment does not indicate that siltation at the berth face of the waiting pontoons is likely to occur sufficient to impact on their usability,

Item	pNRA	Key Points quoted from pNRA		RYA's Comment	Applicant's comment
		during and following construction of new structures can lead to changes in sediment deposition areas and rates with a subsequent reduction in accuracy of available navigation chart data. This will tend to increase the risk of groundings particularly for deeper draughted vessel	pontoons at the edges of navigation and in the lee of bridge-buttresses where currents are minimised and therefore deposition of sediment is likely to be increased	discover particularly shallow patches due to deposition of sediment. Addressing of this localised deposition has not been identified	requirements for maintenance of the facility are included within the dDCO (Document Reference NCC/GY3RC/EX/039, Planning Inspectorate Reference REP3-010), see for example paragraph 69 of the Protective Provisions for GYPC.

Item	pNRA	Key Points quoted from pNRA		RYA's Comment	Applicant's comment
5	5.1.5	Recreational vessels are those used by private individuals for personal or entertainment purposes; they are typically very small to small and can be either motor, sail or non-propelled (paddle)	This may include recreational vessels which are under contract for repair and maintenance by say, Goodchild Marine (Interested Party)	While visibly such vessel under maintenance may be identified as 'Leisure', it should more properly be deemed 'Commercial' through its contract nature. Will this be eligible for preferential Bridge-Lift treatment?	The Applicant has confirmed that a vessel moving under the control of a commercial operation would be classed as a commercial vessel for operational purposes, wording dealing with this point is being prepared for inclusion in the dDCO.
6	7.3.5	To mitigate the potential effects of a bridge mechanism failure the operational procedures implemented for the	Boats may be more subject to river currents and may have particularly poor 'astern' power	Operating procedures to cater for bridge-failure in respect of approaching small boats should be accordingly modified.	Small boats would be directed to the waiting pontoons in the event of a failure, the bridge opening would be commenced sufficiently in advance of their approach (as part of good operational practice from a navigational safety perspective) that they should not need to go astern to reach the pontoons.

Item	pNRA	Key Points quoted from pNRA		RYA's Comment	Applicant's comment
		bridge should take account of the alternative manoeuvres each vessel could take in the event of a failure to open.			
7	App.B 2.1	Mouchel™ were asked to (i) Prepare a questionnaire for stakeholders and (ii) Schedule meetings with stakeholders	This did not happen in respect of Small- Boat stakeholders, being restricted to large commercial only	Similar to 2nd point above, a Robust study to inform an operational regime should have included all stakeholders. The Applicant is preparing a retrospective inclusive HAZID session for Jan-2020 which may address issues not previously foreseen; will this possibly lead to re-appreciation or re-design?	The Port users report was prepared with a specific scope and to provide specific data to be used in further assessments, as there are no recreational marina facilities within the extent of the GYPC area specific questions were not raised with these stakeholders. The principal output from this report is the assessment on the number of vessel movements and openings likely to be experienced, this is reflected in paragraph 4.6.5 in the pNRA. The pNRA process did specifically identify and assess recreational vessels as a class of vessels (see example row 38 of Appendix A). The Applicant can confirm that a further pNRA workshop is planned, this is not a retrospective session but a continuation of an ongoing process associated with scheme development in line with the provision of paragraph 7.1.3 of the pNRA.

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8	App.B 7.5	This report focuses on commercial vessel movements within the Haven, there are also movements of recreational vessels from within the Norfolk Broads to the North Sea, via the River Yare, and vice versa, which will have an effect on the frequency of operations of the bridge. The number of movements of these vessels is limited and	Flotilla movements of up to 20 craft moving together with same purpose has not been addressed; these are estimated as monthly throughout the season. If even such major movements have been omitted, where do others lie in general bridge-operational considerations.	Consideration of all vessel movements have been included in all relevant assessments. The identified flotilla movements may amount to 16-20 bridge operations per year these would be considered limited in comparison to the 8000 annual operations considered in the pNRA (paragraph 4.6.5). An estimation of the time it would take for such a flotilla to pass the Scheme would be between 10 and 15 minutes (depending on vessel speed), again these times are within the range of those considered within the traffic assessments. Provisions for flotilla movements has been included within the Scheme of Operation, Schedule 10 3(7).

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		they are currently controlled over the timings at which their passage through the port can occur. Discussions have taken place with Peel Ports over the requirements for staging pontoons for holding recreational vessels intending to traverse the Haven.		
9	App.C 2.4	The River Yare also provides access to the Norfolk Broads for recreational	The notion of a coordinated approach for all 3 bridges to operate in harmony is proposed	Agreed.

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		vessels via Breydon Water. These vessels have to pass two existing lifting bridges, the Haven Bridge and the Breydon Bridge, during a passage from the sea to the Broads	most strongly. During ISH-1 The Applicant agreed that it should become the intention for the new bridge control to become the single reporting point for any 3-bridge transit, despite different authorities' operations.	
10	App.C 5.3	While the presence of the new bridge had a discernible effect on the navigation of vessels in the area, during slack water conditions the effects were small and did	It is accepted that navigational safety for small boats only becomes high risk at high current flow rates. The issue being that exceptionally high rates of flow are anticipated for considerable periods (Env.Agency envisages >2 knots as exceptional; here <8 knots is calculated)	Flow rates in excess of those already experienced within the River Yare are not anticipated for considerable periods. Indeed, flow rates within the Scheme passage will be less than 3 knots for >90% of the time. The River currently experiences velocities in excess of 3 knots on most tidal cycles therefore this could not be considered exceptional, navigation within the river is already tidally restricted and the scheme is not anticipated to increase this restriction.

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		not appear to increase the risk to navigational safety			
11	App.C 5.4.2.1	It should be noted that these manoeuvres were conducted with a 3 knots tidal stream. Streams have been known to reach 6 knots in extreme conditions within the River.	Why have only mid-range streams been modelled during simulations	During ISH-1 The Applicant stated that extremes of conditions had been simulated, then later admitted to the statement here that most simulations were at mid- range. RYA considers that a broader regime of simulations should have been considered	The range of simulations was selected in agreement with GYPC/A, there are already limitations on vessel movement timings based on tidal conditions, so there is little benefit in simulating a movement that would not occur in the first place. This appendix relates only to the initial simulations, it does not include the further simulations undertaken which are presented in Appendices 4 and 5, these included some runs at velocities above normal tides up to 4.2knots.
12	App.C 5.4.2.2 & App.C 6.1	Lastly the tidal model used in the simulation was for a typical spring tide with a	Highest flow rates (of 6-knots) were dismissed for simulation … because they	RYA estimates that building the new bridge with buttresses causing ~36% constriction of the river,	The Sediment Transport Assessment ES Vol2 App 11C (Document Reference 6.2, Planning Inspectorate Reference APP-130) details all modelling undertaken. RYA's estimates of flow restriction are based on river width only (at Haven the river is 71m wide and the bridge restricts this to 54m a 24% reduction, at the

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		peak main stream velocity of 3.3 knots. The statement that flows can reach 6 knots in certain conditions is not known to apply to the whole of the River; indeed GYPC's General Port and Pilotage Information states "Out-going stream begins. Full flow normally 3 to 4 knots but can	occurred at a different part of the river, at Haven Bridge.	compared to ~24% at Haven bridge will at least replicate those extreme conditions, if not exacerbate by 50% (36 ÷ 24); this notion was summarily dismissed during ISH-1, without explicit reference to data or modelling.	Scheme 88m is reduced to 56m, giving 36%) however this takes no account of the depths of the river at these locations, at Haven the cross-sectional area of the river is 433sqm, this is reduced to 307sqm by the bridge, a reduction of 29%, the Scheme would reduce the area from 580sqm to 395sqm or 32% in its initial condition. This shows that the percentage reductions imposed by both bridges are very similar and in fact the sectional area available at the Scheme would be greater than that at Haven.

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		reach 6 knots with accelerated flows between the buttresses of Haven Bridge."			
13	App.C 6.1	During the simulations, the average time that vessels overlapped the bridge was approximately 1.5 minutes	No small boats were simulated	RYA estimates that for certain ~75% flow rates the speed-over-ground for a small boat only capable of ~5 knots will be close to zero and therefore transit times will become exceedingly high. At SoCG (Applicant/RYA) it is agreed that special will be introduced to predict slow transit rates and	From the Hydrodynamic modelling under normal tidal conditions the flow in the river is predicted to exceed 3 knots for around 5% of the time and only exceed 4 knots during storm events. The anticipated speed over the ground for most recreational vessel transits is anticipated to be between 2 and 3 knots which would result in an overlap duration of between 30 and 45 seconds. The probability of a recreational craft being navigated in extreme storm conditions is considered remote.

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				therefore not release small boats from the waiting pontoons.	
14	App.C 6.2	The effect of bridge narrowing was found to be velocity reduction and flow straightening	This statement was difficult to comprehend and appeared contradictory to all others		These are specific comments on the outcomes of discrete simulations, they are not generalised statements. The first relates to the hydrodynamic effect of vessels moored directly opposite each other in the river and how their effect would be reduced by the presence of the Scheme. In terms of vessels mooring and departing in tidal waters a velocity gradient will always exist between a stationary vessel leaving a berth and the flowing water around it, therefore the situation that will exist with the waiting pontoons and Scheme in place is no different to other locations of berths within tidal waters.
		Departing and berthing difficulties were encountered for some larger vessels from certain quays under high current velocities		RYA considers this does not just appertain to large vessels, but to small boats also, and indeed as stated above may be exacerbated as boats are expected to more or depart across a very steep velocity gradient from zero behind a bridge	

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				buttress to maximum flow, within one hull length.	
15	App.D 5.1	The narrowing of the river through the new bridge is expected to increase these rates by 60% or more, so that normal maxima may be in the order of 5 knots, while peak rates during surge or flood events could theoretically approach 8 knots or more, though it is predicted that due to the "throttling"	There is an apparent ipsative contradiction in stating a maximum flow rate, and then dismissing this because of "throttling" effect	RYA awaits Environment Agency broadening of scope in their flood-risk analysis, to take account of "throttling"; it is felt that "throttling" may create a 'step' in surface conditions which might be felt back upstream for considerable distance (similar to EA reported "Tidal Gate" effect which causes fresh-water flooding of higher reaches within the Broads basin).	The hydraulic model developed to inform the Flood Risk Assessment (Document Reference 6.2, Planning Inspectorate Reference APP-135) accounts for the throttling effect and the resulting impact on water levels upstream of the Scheme. Tables 6.9 and 6.11 in the Flood Risk Assessment provide the changes in water level as a result of the Scheme for the 200 year and 200 year plus climate change events. These results show that the general effect of the Scheme in the channel is to increase water levels south of the Scheme and decrease north of the Scheme. This is because of the constriction in the channel caused by the knuckles used to support the Scheme. This reduces the overall capacity of the channel between the supports, slowing the flow rate through the area and reducing the amount of water that can transit up the channel from the tidal boundary. As outlined in Table 6.3 of the Flood Risk Assessment the reduction in water level at the upstream limit of the model (US1) is minor for the 200 year event and therefore there is no risk of freshwater flooding of higher reaches within the Broads basin as a result of the Scheme.

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		effect of the bridge …			
16	App.D 5.8	The abutments are also more abrupt than the bow or stern of a vessel, so the effects of the current through the bridge is expected to be more marked than present conditions, even when vessels are berthed on both side of the river. The acceleration of the flow and the change of direction near the abutments is	Issues with acceleration of flow and change of direction are predicted within the immediate proximity of the abutments	This is exactly where waiting pontoons for small boats are envisaged. The additional risks identified here are nowhere else applied to small boats approaching or departing the waiting-pontoons.	The outputs from the hydrodynamic model indicate that this is not the case (see for examples plates 6-7 and 6-18). The risks associated with the pontoons have been assessed (Risk item 10).

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		also expected to be greater than that currently experienced. In short the bridge is likely to make Navigation more challenging than is currently experienced			
17	App.D 6.5.1	Once the bridge opens, waiting yachts & pleasure craft should transit the bridge first to reduce obstructions on the waiting berths near the bridge.	The situation appears to consider waiting craft and passing ships both travelling in the same direction.	It is considered of increased risk for small boats and ships intending to transit in opposite directions. Proposed operating procedures do not appear to take this into account.	Vessels passing in the river is an existing navigational risk, through traffic light control it is not intended that any recreational and commercial vessels should pass each other within the bridge passage.
18	App.D	Consideration should be		The consideration stated does not	There is no omission as the statement relates to the specific effect the flow was found to present to a

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	6.5.2	given to methods of reducing the rates of change of both current strength and direction close to the bridge		transfer to small boats; this is a serious omission.	certain manoeuvre, notably the propensity to draw a large vessel into the east bank during passages favouring the east side, away from the pontoons, this is a function of the vessels length and would not occur with vessels less than 40m LOA.
19	Simulations 3	The bridge has three spans comprising two fixed side spans and a central span with a twin leaf bascule, supported on two main piers. These are located with "knuckle" structures in the river, which are protected	Particularly, the abutment fendering is of an individual-cone system	Individual cones present an added risk especially for yachts which might catch their rigging; continuous smooth fendering would be preferable. This is addressed by The Applicant in the SoCG as a recommendation for consideration.	Agreed, as commented on previously.

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		by fendering, in the form of super cone fender units as shown in Figure 3.2			
20	Run-15	Simulations: Runs-15 to -19	These runs would appear to put any vessel on the waiting pontoon at risk of sinking as excessive use of sideways thrusters is made	unacceptable risk. operating procedures should prevent such situations.	This is something that is currently being considered by the Applicant.