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

Document SCC/LLTC/EX/106:

Comments on responses to the ExA's Second Written Questions and to Interested Parties' Representations Submitted at Deadline 8

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

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Foreword

This report is the Applicant's Comments on responses to the ExA's Second Written Questions and to Interested Parties' Representations Submitted at Deadline 8 (Document Reference SCC/LLTC/EX/106). It relates to an application ("the Application") submitted by Suffolk County Council ("the Applicant") to the Secretary of State (through the Planning Inspectorate) 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 the Applicant to construct, operate and maintain a new bascule bridge highway crossing, which would link the areas north and south of Lake Lothing in Lowestoft, and which is referred to in the Application as the Lake Lothing Third Crossing (or "the Scheme").

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Abbreviations

ABP	Associated British Ports
CoCP	Code of Construction Practice
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DfT	Department for Transport
ES	Environmental Statement
ExA	Examining Authority
FRA	Flood Risk Assessment
LPA	Local Planning Authority
NMC	Non Material Change
NMU	Non-motorised user
NRA	Navigational Risk Assessment
NSIP	Nationally Significant Infrastructure Project
PINS	Planning Inspectorate
PNPS	Ports National Policy Statement
RR	Relevant Representation
SCC	Suffolk County Council
SoCG	Statement of Common Ground
SoS	Secretary of State
SSSI	Site of Special Scientific Interest
SRN	Strategic Road Network
SuDS	Sustainable Drainage System
TA	Transport Assessment
WDC	Waveney District Council
WFD	Water Framework Directive
WQ	Written Questions
WSI	Written Scheme of Investigation
WR	Written Representations

1 Introduction

1.1 Purpose of this report

1.1.1. This report, submitted for Deadline 9 of Examination, contains the Applicant's comments on responses to the ExA's Second Written Questions and to Interested Parties' Representations Submitted at Deadline 8 on 12 April 2019.

1.1.2. Representations were submitted by the below parties:

- Associated British Ports (ABP) [REP8-010 to REP8-024]
- Anglian Water Services Limited [REP8-026]
- Lowestoft Cruising Club [REP8-027, REP8-028, REP8-029]
- Marine Management Organisation (MMO) [REP8-025]
- Nexen Group [REP8-031]
- Northumbrian Water Limited [REP8-032]
- NWES [REP8-033]

1.1.3. Responses to ABP's comments are covered in the Applicant's Document Reference SCC/LLTC/EX/107).

1.1.4. The Applicant has only responded to new issues or where further information is required. This report therefore only provides the Applicant's, response to the matters raised by Lowestoft Cruising Club, Nexen Group, Northumbrian Water Limited and NWES, thereby providing a reference document for these interested parties and the Examining Authority.

2 Lowestoft Cruising Club [REP8-027, REP8-028, REP8-029]

2.1 Summary and response to Representations

Reference	Extract / Summary	Applicant's response
REP8-027	LCC is content with the drafting of Article 40 in the latest draft DCO (REP5-003 & REP5-004), subject to the amendment to Article 40, paragraph (6) we have requested in REP7-010, to replace "or" with "and" to ensure that comments from both the Navigation Working Group (NWG) and the Harbour Authority are sought and passed to the Secretary of State	This change has been made to the DCO submitted to this deadline (Document Reference SCC/LLTC/EX/108).

3 Nexen Group [REP8-031]

3.1 IP's Response to Written Questions

Question number	Question	IP's response	Applicant's response
1.15	In the response to the Applicant's NMC6 proposed change to the scheme [REP7-003, Appendix I], the Nexen Group suggest that a low-loader would have to "pass in very close proximity to […] any vehicle parked up and waiting at" the factory doors. Currently, how would a low-loader be able to pass a vehicle so parked at the doors?	In responding to this question, I would first point out that it is not only the low-loader manoeuvre that provides a cause for concern. It is in fact a situation that arises for all hgv manoeuvres. The low-loader is simply an example situation and has been described previously because this is the only vehicle for which swept path analysis has been undertaken and provided by the Applicant. I provide a number of new vehicle swept path drawings to illustrate i] the existing situation and ii] the worsened situation that would be created by the Applicants access proposals for the Nexen site. It is apparent from NEXEN.2/01 and NEXEN.2/02 that the existing access layout allows for a large articulated lorry or a low-loader to enter the site and to drive past a vehicle parked at the factory 'goods-in' door. It is apparent from NEXEN.2/05 and NEXEN.2/06 that the Applicant's proposed access does not provide sufficient space for a large articulated lorry or a low-loader to pass a	A low loader has been used to date track vehicular movements at the request of Nexen as it was identified as the most onerous of vehicles to manoeuvre in and out of the site. Nexen previously indicated that the Applicant's analysis was flawed in that it had not tracked a low-loader without trailer steering (see paragraph 13.8.5.1 of its Written Representation), hence this was provided for in subsequent tracking. The Applicant has reviewed the tracking exercises undertaken by Mayer Brown on behalf of Nexen and while it does not consider it would assist the Examining Authority to repeat those manoeuvres or undertake additional ones of which the permutations are numerous, makes the following observations: NEXEN.2/01 shows FTA articulated vehicle (16.5m) tracking into site from Riverside Road. In order to make the left turn on entry to the site, the vehicle uses the full width of the entrance into the site, at risk of encountering oncoming traffic exiting the site. NEXEN.2/02 FTA articulated vehicle (16.5m) tracking into site from proposed access. In this instance the vehicle avoids using the full width of the entrance in

Question number	Question	IP's response	Applicant's response
		vehicle parked at the factory 'goods-in' door. The existing access arrangement allows the entering vehicle to pass the parked up delivery vehicle in a straight line of travel and with good visibility of operatives on the ground attending the delivery vehicle. The position of the Applicant's proposed access, in close proximity to the Nexen goods-in door, presents an increased safety concern for operatives attending a parked delivery vehicle. The attention of the driver, being drawn to making a turn to enter the site and seeking to avoid the parked delivery vehicle, increases the chance of him not seeing an operative standing on the ground with the potential for the operative to be struck. The north access proposal of Nexen (as described in greater detail below in the response to Question 1.16) would remove any risk from the entering vehicle having to pass a parked up delivery vehicle.	accessing the site, causing that vehicle to require space currently occupied by the FTA rigid delivery vehicle (10m) parked at goods in door. It is unclear why a different approach to vehicular tracking is taken to the proposed access to the existing access (for the assistance of the ExA, swept path analysis is simply undertaken by an operator 'driving' a virtual vehicle of their choice on a route of their choice). If a similar principle is applied to the proposed access as applies to the existing, i.e. that the full width of the entrance may be used then the Applicant considers the vehicle would avoid the stationary vehicle when accessing the site.
1.1.6	In the response to the Applicant's NMC6 proposed change to the scheme [REP7-003, Appendix I], the Nexen Group suggest that "an	In responding to this question, I would first point out that the manoeuvre to park a low-loader at the factory doors is not a common occurrence. Rather, the vehicles that park at the factory doors are more usually large articulated or large rigid delivery vehicles. The low-loader is simply an example situation and has been described previously because this is	NEXEN.2/05 illustrates a low loader tracking past a stationary FTA rigid delivery vehicle (10m) parked at the goods in door in the current situation and NEXEN.2/06 shows the same through the proposed access. A similar point to that above arises, where the movement of the low loader is more constrained by

Question number	Question	IP's response	Applicant's response
	alternative access route further to the north should be considered". How would a low-loader then service the existing factory doors on the western façade of the building?	the only vehicle for which swept path analysis has been undertaken and provided by the Applicant. I provide drawings to illustrate an alternative access route further to the north being used by large vehicles to enter the Nexen site. It is apparent from NEXEN.2/03, NEXEN.2/04 and NEXEN.2/07 that the alternative access route located further to the north can accommodate, without conflict, all the turning manoeuvres of all large vehicles that use the Nexen factory site. The north access would also provide greater assurance to Nexen that unhindered access to the factory site can be provided at all times, including during the LLTC construction phase. The separation of this access from the existing Nexen access would mean that construction works can be undertaken to a staged programme that requires work in the vicinity of only one access location at a time. 5. The alternative north access is also part of a three access strategy (the third access being the access road on the east side of the adjacent Lings property) that Nexen seek to ensure access/egress at all times, particularly during periods of construction and	the operator in tracking through the proposed access compared with the current access. In this case the entering vehicle uses the entire width of the current entrance way (i.e. both sides of the carriageway) and additionally tracks noticeably closer to the western boundary of the site than it does through the proposed access. Consequently, a conflict is created, which again with comparable operator decisions in the no-Scheme and Scheme world may be avoided. With regard to the northern access proposed by Mayer Brown, the Applicant notes that in its representation on Non-Material Change 6 (i.e. the proposed Nexen second access), the Mayer Brown Report 3 stated at paragraphs 4.6 to 4.10 "*the proposed site access of NMC #6 will add a reversing manoeuvre into the vehicle approach to the factory doors, with associated safety implications*" and further… "*reversing to the factory doors will increase the risk of a collision with another vehicle or with a worker in the vicinity*" and that this situation would be "*overcome …*[with] *an alternative access route further to the north*". The Applicant cannot therefore reconcile these comments with the lengthy reversing manoeuvre that would be required with the Nexen northern access proposal, shown in NEXEN.2/07. In summary, for reasons explained in previous representations in particular Appendix K of the Applicant's Consultation Report on the Proposed

Question number	Question	IP's response	Applicant's response
		maintenance, for both the Nexen factory site and their Development Land.	Non-Material Changes (Document Reference SCC/LLTC/EX/92, PINS Reference REP7-003) to the Application, the Applicant considers that the second access point (described as NMC6) represents an appropriate and practical solution for the Nexen site. Notwithstanding that, the Applicant has further offered to Nexen by way of a Side Agreement rights over additional land in Plot 3-13 (which the Applicant proposes to acquire) that would allow the creation of a wider corridor along the western side of the Nexen building. The extent of that area is under discussion between the parties. The Applicant's position on a third access via the Lings site has also been set out in that same Appendix.

4 Northumbrian Water Limited [REP8-032]

4.1 IP's Response to Written Questions

Question	Question	IP's response	Applicant's response
2.3	Has the noise monitoring methodology now been agreed between Northumbrian Water and the applicant and also shared with NWES?"	NWL can confirm that discussions between their noise consultants (PBA) and the Applicant's consultants (WSP) have continued since Deadline 7. WSP has produced a draft methodology for the carrying out of representative noise monitoring in relation to Trinity House prior to the start of construction of the Scheme, and at a suitable period following completion of the Scheme and it coming into operation. A revised draft methodology was received from WSP on 3 April 2019, and this is currently under review. It is still the intention that the agreed methodology will be secured by direct agreement between NWL and the Applicant which will also secure the provision of appropriate noise mitigation measures in circumstances where adverse noise impacts from the Scheme cause a material detriment to NWL's operations at Trinity House. NWL can confirm that it has been in contact with NWES and has kept them up-to-date with the discussions on noise monitoring arrangements being agreed with the Applicant.	The single point of disagreement in the noise methodology relates to the undertaking of internal measurements whilst the building is occupied. The Applicant considers such measurements would helpfully inform future discussions on whether the operation of the Scheme has had a material effect on the ability of NWL to operate the building as a call centre. Appendix A to this document provides an overview of matters discussed and agreed with NWL regarding the noise methodology.

4.2 Summary and response to Representations

Reference	Extract / Summary	Applicant's response
3.1.4 - a	NWL continues to be concerned that the traffic counts being used by the Applicant are an under-estimation of the current levels, and that this has a knock-on effect for the assessment of future capacity. The PBA Third report notes that given the importance of the new junction as the single access route into the Riverside Business Park, the traffic flows being tested need to be robust and representative. A single day of recording doesn't provide such robustness. PBA have noted that taking the 85th percentile flows from the more extensive traffic counts recorded by PBA, this provided flows which are significantly higher than those currently being applied by the Applicant. More extensive trip measurements which were carried out by PBA on December 2018 and which NWL considers are more representative. NWL would strongly urge that the Applicant reconsider the baseline figures being used for their assessment. Should the Applicant continue to rely on its single-day figures, NWL would ask Examining Authority to consider the effect this has on being able to rely on the robustness of those assessments.	As acknowledged by NWL in Appendix 1 of REP8-032 (Additional Transport/Highways Responses on behalf of NWL), the Applicant has uplifted the traffic flows to reflect the difference in base traffic counts. The resulting forecast flows have been adopted for the junction capacity assessments that are reported in Appendix B of REP8-006 (Junction Capacity Assessment based upon Sensitivity Tests). The Applicant considers that these represent a 'worst case' scenario in terms of future growth and therefore provide a robust base for the assessment of junction capacities. The Applicant's response to PBA's comments on the revised flows are detailed in the relevant section below.
3.1.4 - b	NWL is grateful for the updated information regarding the two new roundabouts at the eastern end of Waveney Drive, and note that this includes corrections to the original assessment results. PBA has no further technical comments on the assessments, but it should be noted by the Examining Authority that the updates continue to show that the two roundabouts exceed operational capacity though are still within theoretical	The sensitivity test has been prepared as a 'worst case' scenario and is the culmination of a series of robust assumptions with respect to projections of traffic growth. It is noted that using the original (non-enhanced) forecast flows, with the exception of junction 6 (A12/B1531 Waveney Drive) where the RFC is predicted as 0.89 for the A12 Horn Hill approach in the 2037 PM peak, the capacities of these

Reference	Extract / Summary	Applicant's response
	capacity. While this is acknowledged by the Applicant, no mitigation measures are proposed.	two junctions are all within operational capacity For this reason, the Applicant does not consider that mitigation measures need be specified at this time although it will continue to monitor the performance of the network.
3.1.4 - c	NWL remains of the view that the proposed new ghost island junction to service the Riverside Business Park will result in a traffic arrangement which is less effective to that currently in place, and at risk of reaching capacity within the life period to 2037. Moreover, NWL maintains its concerns that the new junction will very likely result in drivers waiting for substantial periods of time before being able to enter or exit across traffic, and this will increase health and safety risks.	The results of the assessment based on the latest sensitivity test forecast flows show that the proposed ghost island junction will operate well within operational capacity, with a maximum RFC of 0.77 in 2037. The maximum predicted delay of 35 seconds in the 2037 peak hour is not considered substantial.
3.1.5	The proposed ghost island junction will provide the only vehicular access to the Business Park. Even if the adjacent Jen Weld site is developed to the extent of providing an additional road access onto Waveney Drive, the ghost island junction forming part of the Scheme would continue to be the primary access for the Business Park and for Trinity House. NWL therefore considers that it is not unreasonable to expect the Applicant to include within the Scheme a junction that demonstrates sufficient resilience and security of access to maintain operational facilities on the Business Park, as well as providing an attractive proposition to future occupiers. Given the concerns over the potential lack of capacity and the associated health and safety risks, NWL draws the Examining Authority's attention to the recommendations of PBA at para 7.5 of the PBA Third report to "monitor and manage" the	As noted above, based upon 'worst case' scenario predicted flows, the ghost island junction was shown to operate well within operational capacity in 2037. It is therefore clear that the junction could accommodate further future growth, over and above that already assessed, before it would reach/exceed operational capacity. The assessment assumes that traffic from both the Business Park and Jen Weld site will use the junction. The provision of an additional access road with the development of the Jen Weld site will provide even more capacity and therefore the assessment demonstrates a high level of resilience for the future operation of the two sites.

Reference	Extract / Summary	Applicant's response
	proposed new Business Park site access (and two southern roundabouts). This active monitoring needs to be carried out on a regular basis with a view to considering the need for any improvements having regard to the future junction performance. These measures should be secured within the DCO through being added to the specified works listed in Requirement 12 of the draft DCO (Traffic mitigation), including ensuring participation by the local highways authority as the body with direct responsibility for these junctions.	
APPENDIX 1 PBA REPORT (APRIL 2019) – ADDITIONAL TRANSPORT/ HIGHWAYS RESPONSES ON BEHALF OF NWL Section 2	**Existing Observed Riverside Business Park Traffic Flows** 2.3. PBA would comment as follows: • PBA agree that it is standard practice to use the average traffic flow of multiple survey days, and to test and design to average traffic flows, and not maximum traffic flows. • From the July 2016 survey, the Applicant does not know what the recorded average traffic flows were over multiple days, since this was not undertaken at the Riverside Business Park. Therefore, it is also misleading to compare PBA's average recorded traffic flows with the single survey in July 2016. For this reason, PBA also compared the 85th percentile traffic flows over two weeks, and the highest recorded one-day traffic flow. If the Applicant had undertaken multiple survey days in July 2016 of the Business Park, then it is likely that the average would be lower than PBA's December 2018 survey, so the absolute difference between the two average data sets would be greater.	The Applicant considers it reasonable to compare the single day's count in July with the average December flow and to use this ratio to factor the single day July flow for the sensitivity test. That flows were not recorded over multiple days in July 2016 is irrelevant since the flows for the sensitivity test have been uplifted to be consistent with the average flows taken from the December 2018 survey. This is considered to be robust for the purpose of the capacity assessments. As noted in the response to 3.1.4 - b, the sensitivity test has been prepared as a 'worst case' scenario. The forecasts upon which the capacity assessments are based are the culmination of a series of generous assumptions with respect to projections of traffic growth and provide a robust assessment of future junction capacity.

Reference	Extract / Summary	Applicant's response

	• It does not seem unreasonable to PBA, for such a crucial access to a Business Park (i.e., the single point of access), that we fully understand for robustness/resilience/security of access (and highway safety) how the proposed access form to Waveney Drive performs during higher traffic flow days.
	• For example, the recorded 85th percentile traffic flows over two weeks and the maximum one day traffic flows to/from the Riverside Business Park in December 2018 were significantly higher than the recorded average and therefore the Applicant's single day survey:
	  ○ the 85th percentile flows were 26% higher (PM peak hour) than the Applicants single day flow; and
	  ○ the highest one-day flow was 41% higher (PM peak hour) than the Applicants single day flow.
	• With reference to the standard deviation during the recorded PM peak hours (i.e. how much the days differ from the average) from the two-week December 2018 survey, the standard deviation is 40 vehicles. This highlights a large variation in traffic flow numbers to/from the business Park each day. Survey data for a Friday has lower traffic flows than most other weekdays and thus reduces the average. However, even excluding a Friday from the average, some days experienced +40 vehicles difference in an hour.
		PBA acknowledge that it is standard practice to use the average traffic flow of multiple survey days, and to test and design to average traffic flows, and not maximum traffic flows. The method adopted to adjust and uplift the base flows is entirely consistent with this approach. Therefore, the Applicant does not propose to undertake further sensitivity testing to take account of the standard deviation of the recorded PM peak flows.

APPENDIX 1 PBA REPORT (APRIL 2019)	**Chosen Junction Form** The Applicant states that Highways England's DMRB guidance (TD 42/95 – Geometric Design of Major/Minor Priority	The Applicant acknowledges that DMRB is current and relevant and includes all current standards, advice notes

Reference	Extract / Summary	Applicant's response
– ADDITIONAL TRANSPORT/ HIGHWAYS RESPONSES ON BEHALF OF NWL Section 3	Junctions) is 20 years old and therefore not current, and the junction capacity assessment is more reliable. PBA would disagree with this statement. DMRB is not a superseded document, and no guidance has replaced it. PBA would expect to see this document to be the first place to go in the design options / appraisal process for new junctions. The Applicant keeps referencing the junction capacity assessment as the main parameter and deciding factor on chosen junction form. The design of the most appropriate type of junction form should be based on a wide range of factors, not just capacity. For example, there is no reference to Non-Motorised Users (NMU) provision (pedestrians and cyclists) across Waveney Drive at the new Business Park junction, or highway safety for both NMU's and drivers (particularly in light of the Stage 1 Road Safety Audit comment – Problem 1). As PBA stated in Deadline 7 submission, major/minor priority junction will usually have a higher collision rate than other junction types – drivers becoming frustrated and taking risk when exiting. The conversion of priority junctions to traffic signal or roundabout control has been shown to reduce collisions by 30% or more. Traffic signals are also safer for crossing pedestrians and cyclists.	and other documents relating to the design of trunk roads. However, the Applicant notes that for the purpose of assessing junction capacities, the use of Junctions 8 software rather than DMRB is widely regarded as the accepted method since this is based upon latest research and uses of peak hour traffic flows. The chosen junction form was determined with reference to DMRB. The proposed junction layout was then assessed in terms of capacity within Junctions 8.
APPENDIX 1 PBA REPORT (APRIL 2019) – ADDITIONAL	**New Access Road / Waveney Drive junction visibility splays** 4.1. The Applicant agrees that the access design should be in accordance with DMRB TD 42/95, requiring a visibility splay of 90m left and right to exiting drivers. The Applicant states this	Noted

Reference	Extract / Summary	Applicant's response
TRANSPORT/ HIGHWAYS RESPONSES ON BEHALF OF NWL Section 4	will be considered further at the detailed design stage. 4.2. The Applicant does not consider the nominal mismatch in visibility splays will alter the assessment of functionality of the junction. 4.3. PBA has no further comment on this aspect at this stage.	
APPENDIX 1 PBA REPORT (APRIL 2019) – ADDITIONAL TRANSPORT/ HIGHWAYS RESPONSES ON BEHALF OF NWL Section 5	**Strategic Model Sensitivity Tests** 5.1. PBA acknowledge that the Applicant has undertaken two strategic SATURN modelling sensitivity tests in light of comments made by PBA. However, PBA do not agree that "the decision to carry out sensitivity tests was undertaken by the Applicant in the spirit of a positive engagement with NWL…", and "for the purposes of stress testing the Waveney Drive junctions". PBA are not of the view that these were sensitivity tests, but should have been part of the core scenario given the purpose of the Scheme. 5.3. PBA would like to make the following comments regarding the two sensitivity tests that were undertaken: _ Sensitivity Test 1 (ST1) – added additional employment land-uses at the existing Riverside Business Park (from expanding existing tenants and vacant plots). PBA appreciate that there is a level of uncertainty over this, however we must be mindful that this is the only single point of access to the Business Park, with a lesser form of access arrangement (in capacity and pedestrian/cycle accessibility terms) being proposed to replace the existing signal controlled access – as such, resilience and security of access is required.	The original model forecasts were based upon TEMPro, which takes into account future development and is consistent with WebTAG guidelines. This formed the Core Scenario. The Riverside Business Park and Kirkley Waterfront developments were assessed as a sensitivity test on the basis that the development proposals are not yet committed and there is uncertainty over the timing of the proposals. As such, it was not appropriate for the two sites to be included as part of the Core Scenario and were therefore assessed as a sensitivity test. Sensitivity Test 2 included amendments to the model to deter traffic from routeing via Kirkley Run. The Applicant has demonstrated that the model validated well on Kirkley Run. While there may be some doubt about whether this will continue to be used for the development sites as a main route in future, this is considered a valid sensitivity test based upon the uncertainty in relation to future routeing of traffic.

Reference	Extract / Summary	Applicant's response
	– added growth associated with the Kirkley Waterfront redevelopment PBA are of the view that this redevelopment should have been included in the core modelling scenario since the principle of the Scheme is to relieve traffic congestion, but also assist the development and regeneration of Lowestoft in this area – this is a fundamental part of the Scheme and should therefore have been included. _ Sensitivity Test 2 (ST2) – amendments to the routing assignment of Business Park traffic via Kirkley Run / Colville Road. PBA believe this is not a sensitivity test since the Business Park traffic routing in the strategic SATURN model was not considered realistic (i.e., utilising a residential road and not the main A12) or in line with current routing patterns to/from the Business Park, and provided favourable turning movements at the proposed New Access Road / Waveney Drive junction (a left in, left out arrangement).	
APPENDIX 1 PBA REPORT (APRIL 2019) – ADDITIONAL TRANSPORT/ HIGHWAYS RESPONSES ON BEHALF OF NWL	**Revised Junction Capacity Assessments** **PBA's Further Review** 6.10. With reference to the two southern roundabouts detailed above, PBA would comment as follows: - It is unclear why the Applicant is utilising TRL Junctions 8 modelling software which is 4 ½ years old and not the latest Junctions 9 software. - The modelling of the two roundabouts in Junctions 8 does not appear to apply HGV percentages to the turning movements.	Junctions 9.0.0 primarily provided a number of additional tools/features for user convenience. Compared to Junctions 8. The only update in Junctions 9 that significantly altered the way in which capacity is calculated, when compared against Junctions 8, is the revised mini-roundabout model. In relation to the revised model, TRL state:

Reference	Extract / Summary	Applicant's response
Section 6	This would marginally reduce capacity and increase the RFCs further. - It is acknowledged that the two roundabouts are shown to exceed operational capacity, but still within theoretical capacity. The Applicant's response to these assessment results states "*it should also be reinforced that this scenario is the culmination of a number of onerous assumptions with respect to projections of traffic growth as set out earlier in this report. As such having regard to the likelihood of the situation arising and duration of the associated delays in the overall context of the benefits that the Scheme would still deliver, the Applicant considers that no mitigation measures need be specified at this time (having regard to the general duty of the highway authority to monitor the performance of its network).* As set out in Section 5 of this Technical Note, PBA do not consider these to be onerous assumptions in terms of traffic growth. PBA are of the view that to a private developer, this would not ordinarily be an acceptable position in terms of the model results. 6.11. PBA has no further technical comments to make at this stage.	*"Data from the original mini-roundabout model (first introduced in ARCADY 5) has been re-analysed and as a result a revised model is now available."* It should be noted that Junctions 9.0.0 was released in May 2015, and the initial capacity assessments for the Preliminary Transport Assessment (PTA) were undertaken in February 2017, at which point the latest version of Junctions 8 was only 2 years old. Given that the core model for priority junctions and roundabouts were unaffected by the software update, Junctions 8 has been used for all subsequent capacity assessments so as to be consistent with the result presented in the PTA. The only mini-roundabout included in the capacity assessment scope is Junction 7: B1531 Victoria Road/B1531 Waveney Drive/Kirkley Run mini-roundabout, which has been re-modelled in Junctions 9. The latest sensitivity test for these two junctions, for which results are presented in 'Deadline 8 Appendix B: Junction Capacity Assessment based upon Sensitivity Tests', have included HGV proportions in all scenarios. It is therefore clear that the latest results account for the impact of HGVs at the two junctions. The forecasts upon which the capacity assessments

Reference	Extract / Summary	Applicant's response
		represent a 'worst case' scenario and are the culmination of a series of generous assumptions with respect to projections of traffic growth and are intended to provide a robust assessment of future junction capacity.
APPENDIX 1 PBA REPORT (APRIL 2019) – ADDITIONAL TRANSPORT/ HIGHWAYS RESPONSES ON BEHALF OF NWL Section 7	**Revised Junction Capacity Assessments of the New Access Road / Waveney Drive Ghost Island Right Turn Lane Priority Junction** 7.1 It is noted that the revised junction capacity assessment now includes the uplift in base flow using PBA's average observed traffic flows. 7.2. In terms of the revised junction capacity assessments, the 2022 opening year scenario is shown to operate within operational capacity. 7.3. The 2037 future year scenario is also shown to operate within operational capacity with a maximum RFC of 0.77. 7.4. PBA would make the following observations: _ In the 2037 future year, the new access is shown to be within operational capacity, but with a margin of capacity of 0.08 RFC (absolute numbers, from 0.77 to 0.85). _ Even based on these model results, there is predicted to be over ½ minute delay entering and exiting the new access: - right turn in during the AM peak hour (the predominant movement) has a maximum delay per vehicle of 30 seconds, resulting in a Level of Service classification of '*Approaching Unstable Flow'* - right turn out during both AM and PM peak hours (the least movement) has a maximum delay per vehicle of 35 seconds, resulting in a Level of Service classification of '*Unstable Flow'*	As noted in the response to 3.1.4 - and 3.1.5 above, the capacity assessment based upon a 'worst case' scenario demonstrates that the ghost Island junction will operate well within operational capacity with a maximum RFC of 0.77 in 2037. The results of the capacity assessment based upon the Core Scenario shows produces a maximum RFC of 0.28. It is therefore clear that the junction could accommodate further future growth, over and above that already assessed, before it would reach/exceed operational capacity. The assessment assumes that traffic from both the Business Park and Jen Weld site will use the junction. The provision of an additional access road with the development of the Jen Weld site will provide additional capacity and therefore the assessment demonstrates a high level of resilience for the future operation of the two sites. The statement that the results are based upon PBA's base average and by implication the capacity assessments are representative of how the Business Park junction will operate on 'average days' is disingenuous. The results of the capacity assessments as presented in the Transport Assessment reflect the core scenario. The results of the capacity assessments based upon the sensitivity test

Reference	Extract / Summary	Applicant's response
	_ It is acknowledged that a signal controlled junction may have similar levels of delay entering and exiting when compared to a priority junction, but principally because signal controlled junctions inherently generate delay due to their nature. However, one reason that delay at signalised junctions is more 'acceptable' is because drivers expect to be delayed at traffic signals. The key difference however would be driver risk and safety. With traffic signals, drivers know they will be able to get out by waiting for the signals to change, so minimal risk. With priority junctions, drivers would need to take a greater level of risk waiting to enter/exit. This was also acknowledged in Problem 1 of the Stage 1 Road Safety Audit. _ The above additional sensitivity test results are now based on using PBA's base average observed traffic flows to/from the Riverside Business Park. Therefore, on average days, the new Business Park junction is likely to operate within capacity at peak times, as shown in the Applicant's assessment work, albeit with >½ minute delays entering/exiting (and a Level of Service either Approaching or at Unstable Flow). - However, as set out in Section 2 (Observed Traffic Flows) of this Technical Note, it is not clear how the new access (and southern roundabouts) may operate during higher traffic flow days at the Business Park. PBA has already demonstrated that regardless of the observed average flows, the recorded 85th percentile traffic flows over two weeks and the maximum one-day traffic flows to/from the Riverside Business Park were significantly higher than the recorded average. It could be that on higher traffic flow days, the new access is unlikely to operate within operational capacity, especially considering the Level of Service as detailed above during average days, and	forecasts represent a 'worst case' scenario and are the culmination of a series of generous assumptions with respect to projections of traffic growth. As such they are more likely to be indicative of how the junctions would operate assuming higher traffic growth and higher forecast flows. Notwithstanding that the Applicant considers its assessments to be robust, and that the Highway Authority has a general responsibility to monitor the conditions of the highway network, the Applicant has included in the DCO submitted to this deadline a modification to Requirement 12 to provide NWL comfort that a proportionate approach to monitoring will be undertaken for the junctions over which they have identified concerns.

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	the margin of capacity is relatively tight (higher traffic flow days may tip the margin of capacity remaining at 0.08). Should this situation occur on higher traffic flow days, would this be acceptable to the local highway authority and Business Park tenants, and the potential knock-on effect to driver safety and Non-Motorised Users. The greatest risk to the Business Park is that, in reality, should the proposed ghost island priority junction not operate within capacity as per the strategic modelling projections, particularly on high traffic flow days, the design could restrict an occupier/developer the ability to enhance the junction to signals in the future. Although this comment could be said about any new junction/access design, in this case this is the only point of access to the Business Park, at least until a second access is provided to the Kirkley Waterfront redevelopment (although any additional new junction would be designed to accommodate its own development traffic). 7.5. PBA would suggest the best way forward to respond to this level of uncertainty and likely traffic flow fluctuations to/from the Business Park is to 'monitor and manage' the proposed new Business Park site access (and two southern roundabouts). PBA note that where off-site highway mitigation works are proposed as part of the Scheme (e.g., B1531 Victoria Road / B1531 Waveney Drive / Kirkley Run mini-roundabout, and A12 Tom Crisp Way / Blackheath Road signalised junction), the local highway authority will monitor the performance of the junctions on a regular basis and consider the need for improvements, having regard to future junction performance. This is proposed to be secured through the DCO (Requirement 12 of the draft DCO). PBA would strongly	

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	recommend that such monitoring apply to the proposed New Access Road / Waveney Drive ghost island right turn lane priority junction, and that this be secured through the DCO.	

5 NWES [REP8-033]

5.1 IP's Response to Written Questions

Question	Question	IP's response	Applicant's response
	Have NWES secured any further technical evidence from the 'noise specialists' to support their statement at bullet point 5 of their Deadline 7 submissions that the effects of the LLTC proposals would be 'very severe' [REP7-012]?	May I kindly advise that we have appointed Peter Brett Associates LLP who will liaise with Suffolk County Council's appointed consultants – WSP, to establish a survey and assessment methodology to determine the change in noise levels as a result of the Lake Lothing Third Crossing. As stated in our written representation dated the 14th March 2019, earlier discussions with noise specialists have indicated that the noise specialists believe that the noise impacts of the Third Crossing (both during the construction and throughout the operational phases) on Riverside Business Centre will be very severe, due to a combination of the noise impacts of the Third Crossing and associated traffic, and the existing form of construction of Riverside Business Centre (i.e. it doesn't have air conditioning, was not designed for a mechanical ventilation solution and it is not 'air tight'). It might well be that Riverside Business Centre is no longer fit for purpose due to the noise generated as a direct consequence of the proposed compulsory purchase of some of Nwes' land and the cumulative impacts of the Third Crossing. If as a	The Applicant remains in discussion with NWES regarding noise monitoring and currently awaits feedback from PBA. It has not had sight of NWES' advice from noise specialists (as referred to in its Deadline 7 and Deadline 8 submissions)

Question	Question	IP's response	Applicant's response
		result of the scheme (both during construction and thereafter), the noise is unacceptable, SCC must commit to ensuring that sufficient noise mitigation measures will be put in place.	

Appendix A NWL noise matters under discussion

Theme	Topic	Matters Agreed	Matters under discussion
Noise Measurements	Objectives	The objectives of the noise monitoring. The need to undertake noise monitoring: • Inside Trinity House, when the building is unoccupied and the ventilation / building services systems are not operational; • Inside Trinity House, when the building is unoccupied and when the ventilation / building services systems are operational; • Outside Trinity House, to determine the levels of road traffic noise incident on the building simultaneously with the internal monitoring.	The need to undertake noise monitoring: • Inside Trinity House, when the building is occupied as part of its normal use and the ventilation / building services systems are in normal operation.
	Personnel and Equipment	The qualifications of the personnel undertaking the monitoring and the specifications of the equipment to be used.	
	Measurement Positions	The noise monitoring positions are to be established by the monitoring personnel at the time of undertaking the survey, using their professional skill and judgement. Monitoring personnel will take into account industry best practice and principles as set out in the ANC Guidelines where possible to do so.	
	Duration and Timing	Monitoring will take place for 30 minutes at each monitoring location. Monitoring will not take place during unusual traffic patterns or during inclement weather.	
	Equipment set-up and	The parameters to be monitored, recorded and	

Theme	Topic	Matters Agreed	Matters under discussion
	measurement parameters	stored during the monitoring exercise.	
	Practical Issues	The need to undertake traffic surveys concurrent to noise monitoring.	
	Information to be recorded	The information to be recorded and how it will be shared between both parties.	