

# A47/A11 Thickthorn Junction

**Scheme Number: TR010037**

**Volume 9**

## **9.22 Applicant's Responses to Submissions at Deadline 6**

The Infrastructure Planning (Examination Procedure) Rules 2010  
Rule 8(1)(c)

Planning Act 2008

February 2022

Infrastructure Planning

Planning Act 2008

**The Infrastructure Planning  
(Examination Procedure) Rules 2010**

A47/A11 Thickthorn Junction  
Development Consent Order 202[x]

---

**9.22 APPLICANT'S RESPONSES TO SUBMISSIONS  
AT DEADLINE 6**

---

<b>Rule Number:</b>	8(1)(c)
<b>Planning Inspectorate Scheme Reference</b>	TR010037
<b>Application Document Reference</b>	TR010037/EXAM/9.22
<b>BIM Document Reference</b>	HE551492-GTY-LSI-000-RP-ZL-40701
<b>Author:</b>	A47/A11 Thickthorn Junction Project Team, Highways England

<b>Version</b>	<b>Date</b>	<b>Status of Version</b>
Rev 0	February 2022	Deadline 7

## CONTENTS

1	<b>Introduction .....</b>	<b>1</b>
2	<b>Key Abbreviations.....</b>	<b>1</b>
3	<b>Anglian Water .....</b>	<b>2</b>
4	<b>Richard Hawker .....</b>	<b>2</b>
5	<b>Brown &amp; Co on Behalf of Big Sky Developments .....</b>	<b>4</b>
6	<b>Norfolk County Council .....</b>	<b>4</b>

## 1 INTRODUCTION

- 1.1.1 The Development Consent Order (DCO) application for the A47/A11 Thickthorn Junction was submitted on 31 March 2021 and accepted for examination on 28 April 2021.
- 1.1.2 The purpose of this document is to set out Highways England's (the Applicant) comments on responses to submission at Deadline 6 issued 20 January 2022:
- Norfolk County Council (**REP-024**)
  - Anglian Water (**REP6-025**)
  - Brown and Co on behalf of Big Sky Developments Ltd (**REP6-026**)
  - Richard Hawker (**REP6-027**)
- 1.1.3 The following sections present the responses where concerns or requests are made warranting provision of additional information or clarity by the Applicant.

## 2 KEY ABBREVIATIONS

- 2.1.1 The following common abbreviations have been used in the Applicant's submissions to the Examination:
- dDCO = draft Development Consent Order
  - DMRB = Design Manual for Roads and Bridges
  - ES = Environmental Statement
  - ExA = Examining Authority
  - NPSNN = National Policy Statement for National Networks 2014
  - NWL = Norwich Western Link
  - the Scheme = the A47/A11 Thickthorn Junction

### 3 ANGLIAN WATER

3.1.1 The below submission on 20/01/2022 (see below link) from Anglian Water has been examined and the responses to the questions and concerns raised are provided in the table below.

- <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010037/TR010037-000709-Anglian%20Water%20-%20Comments%20on%20the%20Applicant%E2%80%99s%20revised%20draft%20DCO.pdf>

Ref	Comment	Applicant's Response
Submission ID: 7535	<p>Anglian Water (AW) has been seeking to agree the form of Protective Provisions with National Highways (NH) through the progression of drafting and issues on other NH NSIP projects Black Cat, Blofield &amp; Tuddenham. As requested in our email to NH's agent in October 2021 would want to assist the Examining Authority through the preparation of a Statement of Common Ground by NH which would summarise areas of agreement and the remaining points between parties. For completeness the issues on other schemes draft DCO Orders which also require resolution for the Thickthorn scheme are:</p> <ol style="list-style-type: none"> <li>1. Clarity of the powers which will be used by NH to undertake utility works</li> <li>2. The reduction of compensatory funding from NH which AW is asked to take because its assets are replaced when they don't need to be &amp; the consequent reduction in AW's ability to fund undertake environmental works</li> <li>3. Use of the AW Inflow system by NH which is used by other developers and which when then has the flexibility to then enable matters to be progressed offline and directly with AW</li> </ol>	<p>The Applicant is producing a Statement of Common Ground with Anglian Water, this will be submitted to the ExA by deadline 9.</p>

### 4 RICHARD HAWKER

4.1.1 The below submission on 20/01/2022 (see below link) from Richard Hawker has been examined and the responses to the questions and concerns raised are provided in the table below.

- <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010037/TR010037-000734-submissions%20received%20by%20Deadline%205.pdf>

Ref	Comment	Applicant's Response
N/A	<p><b>Air quality</b></p> <p>I am grateful for the detailed response provided by the applicant in REP4-026. This provides useful figures for comparison. Thank you.</p>	
N/A	<p><b>Transport and Traffic.</b></p> <p>The applicant has stated that the traffic modelling conforms to the requirements of the TAG guidelines. But we have no way of checking the accuracy of that statement. We are not told what the TAG guidelines are. We are given no turning-count figures, from which we might ascertain that the massively-expensive underpass from northbound A11 to eastbound A47 was justified. It would be just as informative if the applicant were to simply state that because the scheme provides more roads, it is bound to alleviate traffic problems, a statement it would be difficult to argue with; the expense of traffic modelling could have been avoided. The question is surely whether the predictions are believable, and whether the expense is justified, or whether other interventions would be better value for money. This can only be assessed with sufficient traffic data. I appreciate that the applicant may not want to comment on the figures I have shown from the NDR scheme: nevertheless, as the same basic traffic modelling programme is being used, the analysis I show is relevant in that it shows such a vast difference between predicted and actual figures. A clear understanding of the underlying assumptions, and especially the turning counts and origin–destination figures, should give us some means of checking that the figures are reasonable and that the predictions for Thickthorn are likely to be much more accurate than the woeful predictions for the NDR.</p>	<p>The Applicant wishes to direct the examiner back to previous the submission (<b>REP5-021</b>):</p> <p>Section 4.2 in the Case for the Scheme (<b>APP-125</b>) details the Baseline data collection for the traffic modelling assessment. The baseline dataset includes the collection of volumetric traffic count, network and vehicle journey time data sources. This information is used in the model development process to calibrate and validate the baseline model. The fully calibrated and validated base year model then provides a stable basis to undertake the future year assessment of the Scheme. As such the applicant does not deem it necessary to release the collected traffic data.</p> <p>The base model was developed in accordance with the DfT's TAG Unit M3.1: Highway Assignment Modelling (2020). The strategic base year model development process is outlined in Figure 4.8 of the Case for Scheme (insert Ref). The tables below summarise the TAG criteria base year link validation and calibration and journey time validation criteria.</p> <p>As discussed in 4.3.1 of the Case for scheme (<b>APP-125</b>), the NATS model includes AM and PM peak hours (08:00 to 09:00 and 17:00 to 18:00) and an Inter-Peak (IP) average hour (10:00 to 16:00) time segments. The model calibration is undertaken on the basis of the AM, IP and PM peak hour time periods, rather than on a daily basis.</p> <p>Link flow and turning movement validation criteria and acceptability guidelines</p>

	<p>It is of little comfort to learn that the NATS2019 base model shows an increase in traffic over the NATS2015 base model of around the same value as expected in the whole country. 'Plugging in' a year-on-year increase in the computer programme to generate this increase is surely very simple indeed. That still does not give any confidence that it can predict what will happen at the Thickthorn junction as a result of the proposed scheme, which is what we are interested in. Please can we be shown actual and predicted figures, and the criteria for accuracy or validation given.</p> <p>Please can we be shown turning count and origin-and-destination figures for vehicles using the junction. Without these, it is impossible to assess the need for and effect of the proposed design with regard to traffic levels on the roundabout.</p>	<table border="1" data-bbox="1144 213 1675 736"> <thead> <tr> <th>Criteria</th> <th>Description of criteria</th> <th>Acceptability guideline</th> </tr> </thead> <tbody> <tr> <td rowspan="3">1</td> <td>Individual flows within 100 veh/h of counts for flows less than 700 veh/h</td> <td>&gt;85% of cases</td> </tr> <tr> <td>Individual flows within 15% of counts for flows from 700 to 2,700 veh/h</td> <td>&gt;85% of cases</td> </tr> <tr> <td>Individual flows within 400 veh/h of counts for flows more than 2,700 veh/h</td> <td>&gt;85% of cases</td> </tr> <tr> <td>2</td> <td>GEH &lt;5 for individual flows</td> <td>&gt;85% of cases</td> </tr> </tbody> </table> <p>Journey time validation criterion and acceptability guideline</p> <table border="1" data-bbox="1144 831 1711 1009"> <thead> <tr> <th>Criteria</th> <th>Acceptability Guideline</th> </tr> </thead> <tbody> <tr> <td>Modelled times along routes should be within 15% of surveyed times (or 1 minute, if higher than 15%)</td> <td>&gt;85% of routes</td> </tr> </tbody> </table> <p>In order to complete a fully TAG compliant assessment of the Scheme, the existing NATS model was updated and recalibrated based on up-to-date survey data. The results of the calibration indicated that the TAG criteria were achieved for link flow calibration and validation. In addition, TAG criteria were also achieved for the journey time validation assessment. Furthermore, the model assignment convergence has been monitored and meets the criteria in TAG unit M3.1 in all time periods.</p> <p>Further information on base model calibration and validation standards can be found in DfT's TAG Unit M3.1: Highway Assignment Modelling (2020)  <a href="https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938864/tag-m3-1-highway-assignment-modelling.pdf">https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/938864/tag-m3-1-highway-assignment-modelling.pdf</a></p>	Criteria	Description of criteria	Acceptability guideline	1	Individual flows within 100 veh/h of counts for flows less than 700 veh/h	>85% of cases	Individual flows within 15% of counts for flows from 700 to 2,700 veh/h	>85% of cases	Individual flows within 400 veh/h of counts for flows more than 2,700 veh/h	>85% of cases	2	GEH <5 for individual flows	>85% of cases	Criteria	Acceptability Guideline	Modelled times along routes should be within 15% of surveyed times (or 1 minute, if higher than 15%)	>85% of routes
Criteria	Description of criteria	Acceptability guideline																	
1	Individual flows within 100 veh/h of counts for flows less than 700 veh/h	>85% of cases																	
	Individual flows within 15% of counts for flows from 700 to 2,700 veh/h	>85% of cases																	
	Individual flows within 400 veh/h of counts for flows more than 2,700 veh/h	>85% of cases																	
2	GEH <5 for individual flows	>85% of cases																	
Criteria	Acceptability Guideline																		
Modelled times along routes should be within 15% of surveyed times (or 1 minute, if higher than 15%)	>85% of routes																		
N/A	<p>The applicant states that there is not enough detail in my suggestion of a slip-road from the A47NW to allow a review. Surely there is not much more detail required: I suggest a slip-road taking traffic from the A47NW to the larger of the two small roundabouts to the west of the main junction. I am grateful for the more detailed explanation regarding the slip road from A47W to A11S, stating that the design criteria have changed since the Thickthorn junction was first built, and that a direct entry onto the trunk road would not now be allowed in new designs, unless not feasible, on safety grounds. What is the accident record here? Is there any reason to alter the arrangement here at all? It would seem a great stretch of the term 'feasible' to include building a whole new stretch of road and bridge spanning at least two carriageways.</p>	<p>The Case for the Scheme (<b>APP-125</b>) sets out a detailed explanation of the need for the scheme (section 3), the transport case for the scheme (section 4) and conformity with planning policy and transport plans including the Road Investment Strategy RIS1 and RIS2. The Applicant is not proposing to make any further changes to the design of the Scheme. Accident information can be found in Section 4.12 of the Case for the Scheme (<b>APP- 125</b>)</p>																	
N/A	<p>I appreciate the more detailed review of the existing footbridge over the A47. I do not agree that the bridge could not be made more suitable for cyclists (for equestrians, I agree this would not be feasible). It is usable now by cyclists if one is prepared to lift and wheel one's bike. Some modifications could improve it, if not bring it to modern required standard. But is any change really needed at all? Again, the suggested movement of the bridge, precipitating a new bridge to modern standards, is only made necessary because of the underpass proposed. The need for it cannot be properly assessed without the traffic figures I have requested. Achieving modal shift to public transport may not be specific aim of this scheme, but it IS a stated general government policy.</p>	<p>The provision of the new footbridge is beneficial and the Applicant is not proposing to make any changes to the design. Further details can be found in the Walking, Cycling and Horse-Riding Assessment can be found in Section 4.13 of the Case for the Scheme (<b>APP- 125</b>).</p>																	

N/A	<p>The Park-and-Ride facility is to be expanded, which one hopes will encourage more motorists to use it, or reflects an existing pressure on it, and this indicates a desire on NCC's part to encourage a modal shift. The applicant stated, with no figures, that the numbers of cars accessing the site from the A11 is not significant. What ARE those figures, and surely, they would be expected to rise? Also, the applicant states that cycling and walking facilities from the Park-and-Ride site are planned to be improved. I do not see the relevance of this, surely the Park-and-Ride facility is intended for motorists to leave their cars and catch a bus to their final destination, not generally use a bicycle or walk to their final destination?</p>	<p>A dedicated slip road from the A11 Northbound to the Park and Ride facility would not significantly reduce the amount of congestion predicted on the A11 eastbound approach to the Thickthorn junction.</p> <p>Table 4.12 in the Case for the Scheme (<b>APP-125</b>) details the number of vehicles accessing the Park and Ride scheme in the design year for the Do Something (DS) scenario. During the AM Peak, 329 vehicles will be accessing the Park and Ride facility from all routes which is relatively minor. By comparison 1323 vehicles during the AM Peak are forecast to use the proposed A11-A47 connector road, and 1765 vehicles are forecast to use the A11 eastbound approach to the Thickthorn Junction, as shown in table 4.8 in the Case for the Scheme.</p> <p>The pedestrian and cycle access into the Park and Ride has been developed in consultation with Norfolk County Council.</p>
-----	--	---

## 5 BROWN & CO ON BEHALF OF BIG SKY DEVELOPMENTS

5.1.1 The below submission on 20/01/2022 (see below link) from Brown and Co on behalf of Big Sky Developments has been examined and the responses to the questions and concerns raised are provided in the table below:

- <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010037/TR010037-000707-Brown%20%20Co%20-%20Other-%20Request%20to%20attend%20Open%20Floor,%20Compulsory%20Purchase%20and%20Issue%20Specific%20hearings.pdf>

Ref	Comment	Applicant's Response
	<p>We request that Charles Birch as the agent for Big Sky Developments Ltd., and Stuart Bizley from Big Sky Developments Ltd be able to attend whichever of the Open Floor Hearing, Compulsory Acquisition Hearing and Issue Specific Hearing might be required for the Ex.A. to be able to discuss any issues arising from the loss of Older Children's recreation space and Formal open space resulting from the scheme.</p> <p>We presume this will be the Issue Specific Hearing, but we are available at request</p>	
	<p>Comment on Plot 7/7d</p> <p>The Applicant has assured Big Sky Developments Ltd that they will try to restrict the use of the area referred to as plot 7/7d and remove their welfare facilities as soon as possible.</p> <p>We understand this may not be known until the Secretary of State's decision when the detailed design will be completed and can be confirmed.</p> <p>It would be helpful if the ExA could ensure the Applicant doesn't omit to remember this commitment</p>	

## 6 NORFOLK COUNTY COUNCIL

6.1.1 The below submissions on 20/01/2022 (see below link) from Norfolk City Council has been examined and the responses to the questions and concerns raised are provided in the table below:

- <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010037/TR010037-000736-Norfolk%20County%20Council.pdf>
- <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010037/TR010037-000704-Norfolk%20County%20Council%20-%20Other-%20The%20remaining%20NCC%20responses%20to%20ExQ2%20Deadline%205.%20Questions%20relating%20to%20Biodiversity,%20Ecology%20and%20Natural%20Environment.pdf>

Ref	Comment	Applicant's Response
	<p>Norfolk County Council officers have viewed South Norfolk District Council's response to question DCO.2.3 in the ExQ2 (Deadline 6) in relation to the discharge of requirements for this scheme. Following discussion, NCC will be resubmitting a revised response to this question to align with the comments made by the LPA. These revised comments will be submitted no later than Deadline 7.</p>	

<p>BIO.2.6</p>	<p>The following initiatives which would potentially complement the schemes ecological mitigation and enhancement plans:</p> <ul style="list-style-type: none"> <li>-The Norfolk Mink Control Project <b>Redacted</b> would potentially complement the scheme. The project aims to reduce mink population densities which help halt the decline in water vole populations (and Water Life Recovery East). The Norfolk Mink Project would welcome the opportunity to discuss potential opportunities.</li> <li>-Norfolk County Council has an ambition to plant '1 Million Trees for Norfolk' see <b>Redacted</b></li> </ul> <p>Regard has been given to the Record of Environmental Actions and Commitments (REAC) in Table 3-1 in Volume 7 7.4 Environmental Management Plan (First Iteration) December 2021.</p>	<p>The Applicant can confirm that the Norfolk Mink Control Project will be consulted as the detailed design develops regarding the water vole mitigation and opportunities for collaboration.</p> <p>As part of the Scheme design, an extensive Landscaping planting plan is proposed as shown on the Environmental Masterplan (<b>APP-123</b>). The amount or extent of new tree planting shown by the Environmental Masterplan (<b>APP-123</b>) is considered to represent the optimum quantum of new tree planting within the DCO boundary taking account of a full range of considerations including the landscape character context; gradients associated with the earthworks; health and safety in regard to future management; and other ecological objectives (for example the value in some locations of retaining some areas of habitat mosaic and open grassland).</p>
<p>BIO.2.8</p>	<p>Application FUL/2021/0064 Thickthorn Park and Ride extension has been submitted to Norfolk County Council for determination.</p> <p>Comments on REP2-008 Applicant's response to the Local Impact Report</p> <ul style="list-style-type: none"> <li>• Ancient Woodland - Pages 21, 24 and 29 of the report. The Woodland Trust note that many ancient woods under 2 ha are not currently included in the Ancient Woodland Inventory (AWI). Where botanical surveys suggest potential for ancient woodland (as is the case for Unit 9 and Unit N) additional evidence is required to demonstrate whether it is likely or unlikely to be ancient. Such evidence should include old maps and other documentary evidence as well as any remnant manmade features onsite.</li> <li>• 8.7.55 does not elaborate on how areas assessed as having 'high' levels of bat activity was quantified (apologies I put 8.7.5 in the LIR) (see Richardson et al 2019 for discussion on determining high, medium and low levels of bat activity.) <b>Redacted</b> provides a tool for the standardised, rigorous interpretation of bat activity data.</li> </ul>	<p>Unit N and Cantley Wood (referenced as W2 in the Arboricultural Impact Assessment) have not been identified as Ancient Woodland. Natural England and Forestry Commission Guidance: "Ancient woodland, ancient trees and veteran trees: protecting them from development" identifies Ancient Woodland as any area that's been wooded continuously since at least 1600 AD.</p> <p>Cantley Wood is first mapped in 1836 and can be reliably shown not to have been extant in 1826. It is not part of the Registered Park and Garden at Intwood Hall, and not part of any relevant HER asset. The historic mapping does not identify any areas of extant woodland within the study area that can be shown to have existed continuously from 1600 AD.</p> <p>The approach to assessing levels of bat activity is outlined in the AECOM (2017) bat survey report submitted as part of the Examination Deadline 7 submission (Ref number: <b>TR010037 EXAM9.24</b>). No guidance is available on what constitutes low, moderate or high bat activity based on number of passes. As such a relative scale is used by AECOM in this report where:</p> <ul style="list-style-type: none"> <li>• Very Low Activity is a mean of less than 2 passes per hour (at each survey location)</li> <li>• Low Activity is a mean of 2 to 25 passes per hour</li> <li>• Moderate Activity is a mean of 26 to 99 passes per hour</li> <li>• High Activity is a mean of over 100 passes per hour</li> </ul>
<p>BIO.2.9</p>	<p>With regards to the Applicant's response (REP2-006) regarding barbastelle activity (BIO 3.6)</p> <ol style="list-style-type: none"> <li>1. The aim of pre-construction surveys is to collect robust data to allow an assessment of the potential impacts of the development on the bat species using the area. As acknowledged in 3.2.1(REP4-015) current British survey guidelines (Collins, 2016) are not designed for liner developments and, as noted in REP4-015, WC1060 Development of Cost Effective Method for Monitoring the effectiveness of mitigation for bats crossing linear transport infrastructure (Berthinussen and Altringham, 2015)<sup>1</sup> and Fumbling in the Dark (Elmeros et al 2016)<sup>2</sup> was used to inform survey design.</li> <li>2. 'Best practice principles for surveying' developed by Berthinussen and Altringham (2015) recommends survey methods designed to provide comparable pre-and post-construction data – to assess potential impacts, to be used alongside other pre-construction surveys including acoustic surveys, and radio tracking surveys'</li> <li>3. The guidelines recommend that transect surveys are undertaken over at least two seasons where possible and that a minimum of six dusk or dawn surveys at each location where mitigation is to be installed should be undertaken<sup>3</sup>. The absence of transects and only three activity surveys at crossing points falls short of the standard advised in the guidelines. It is also not clear how pre and post-construction surveys have been designed in order to detect change (assess effectiveness of mitigation).</li> <li>4. The guidelines also require the total number of bats crossing to be counted (see Appendix G of WC1060), but unless thermal imaging is utilized on all surveys this will not be achievable when it is too dark to see bats with the naked eye (also see point 7 below).</li> <li>5. While Berthinussen and Altringham indicate surveys</li> </ol>	<p>Survey effort was determined by professional judgement based on guidelines in Berthinussen and Altringham (2015) and upon research undertaken on barbastelle bats in the area for the Norwich Western Link Road (NWLR). Two surveys, one dusk and dawn survey and one either dusk or dawn survey, were undertaken at each potential crossing point with different survey times and lengths to target different species. 'Survey one' comprised a 1.5-hour dusk survey starting 15 minutes before sunset and ending one hour and 15 minutes after sunset, and a 1-hour dawn survey starting one hour before sunrise. These surveys targeted earlier emerging species (such as pipistrelle species) which may sometimes emerge before sunset. 'Survey two' comprised either a dusk survey (crossing point one) starting at sunset and ending approximately 2.5 hours after sunset or a dawn survey (crossing point two) starting approximately 2.5 hours before sunrise and ending at sunrise.</p> <p>These surveys targeted later emerging species (such as the rarer barbastelle bat). The research undertaken for the NWLR revealed that barbastelle bats in the area spend time foraging near the roost location after emerging and don't commute further afield until later in the evening.</p> <p>A Pulsar Helion XP28 thermal imaging scope was used during the second dusk surveys at each crossing point on 4 August 2020 at crossing point one and 6 August 2020 at crossing point two in order to have a visual observation of the bats in darker conditions and confirm whether or not the bats recorded on the detector were crossing the A47/A11 carriageways. Thermal imaging equipment were not used for the remaining surveys, however this does not invalidate the survey results as visibility was good. Crossing point surveys were undertaken under best practice guidance (WC1060 Development of a Cost Effective Method for Monitoring the Effectiveness of Mitigation for Bats Crossing Linear Transport Infrastructure) (Berthinussen and Altringham, 2015). This</p>



	<p>should be undertaken over at least two seasons (see point 5), Christensen, et al, 20164 recommends that due to the 'variability and plasticity in landscape use by bats' it is important that thorough studies in very early in the road planning phase (2-3 years) are undertaken.</p> <p>6. Thus, where previous survey results (from 2016, 2017 and 2018) are referenced and used to justify decisions (see 3.2.2 REP4-015), they should be submitted in support of the application and available for examination, to enable the survey methodology/data to be reviewed and assessed against best practice guidelines. Consideration should also be given to the validity of the data (see CIEEM guidelines5) in that supporting evidence should be valid, and ideally no more than three years old.</p> <p>7. The limitations of survey methodology (Section 8.5 of Chapter 8 APP-045) should also be considered. Barbastelles are one of the least detectable bats and are difficult to detect using bat detectors compared to other species (a barbastelle bat pass can be detected up to 15 meters away (Barataud 20156)). Also, as previously mentioned, greater use should be made of thermal imaging equipment (which aids observation of bats when it is too dark to see them with the naked eye) as its use was limited to two of the six surveys7. The limitations of visual observation of bat crossings the road (or emerging from trees) and bat detectability have not been identified in the limitations section (3.6 of REP4-015, as per BS42020:2013).</p> <p>8. The presence of 'low' numbers of bat calls for barbastelles, one of the UKs rarest bats should be considered within context. No context has been provided. Consideration should be given to the level of activity in the context of other sites within the UK or the region would be a more evidence-based approach to assigning relative levels for rare species (see EcoBat). Wray, Wells, Long and Mitchel Jones (2019) 8 published a framework for valuing bats in Ecological Impact Assessment which considers the rarity of the species (it has been used in support of the Sizewell C application.</p> <p>9. Potential impacts on 'bats', have been assessed (table 8-12 Chapter 8) but it is considered that the ES should address impacts/mitigation/compensation on each bat species recorded onsite as 'one size' does not fit all.</p> <p><b>Further Comments on REP2-006 - 9.3 Applicant's Response to the Examining Authority's First Written Questions (ExQ1s)</b></p> <p>BIO 3.7 It is acknowledged that a letter of no impediment has been issued by Natural England with respect to water voles (see REP5-024), although this is subject additional information/mitigation measures.</p> <p>BIO 3.8 Noted. Please see comments relating to the Norfolk Mink Control Project and BIO 3.7 above.</p> <p>BIO 3.9 Please see previous comments.</p> <p>BIO 3.10. Noted. Given the small diameter of the proposed culvert at Cantley Lane South it is recommended, as per the LONI for water voles (REP5-024) from NE that a dry underpass pipe is incorporated into the design allow movement of water voles under flood conditions.</p> <p>BIO 3.11. Noted. Robust baseline surveys should negate the need for this.</p> <p>BIO 3.12 – 3.24 noted.</p> <p><b>Biodiversity Net Gain (BNG)</b></p> <p>REP2-006 Bio 3.5 (ii). It is disappointing that National Highways cannot commit to providing overall BNG or indicate the extent of BNG onsite given that the DEFRA Biodiversity Metric, is the government standard for doing so. Other NSIPS, such as the Sheringham Shoal Extension project9 and Sizewell C10, have adopted this standard.</p>	<p>guidance recommend surveying at temperatures of 7°C and above at the start of the survey in dry conditions with wind speeds lower than 20km/h. All surveys were undertaken within the recommended weather conditions. Bats crossing the road were recorded by sight and by survey equipment. The number of bats observed during transect, static and emergence re-entry surveys compares favorably to the data set of biological records. On that basis, it can be concluded that the Applicant's surveys give a fair representation of bats present and crossing the road.</p> <p>Notwithstanding this, the Applicant proposes to undertake further pre-construction surveys during 2022, which will be in line with guidance set out in Berthinussen and Altringham (2015). These surveys will address any gaps from the existing survey data and will also utilize thermal imaging equipment.</p> <p>The historic bat survey report from 2017 has now been provided as part of the Examination Deadline 7 submission. Please refer to the A47 Thickthorn Junction Improvements Bat Survey Report (AECOM, 2017).</p> <p>During the latest round of surveys, one single pass of the rarer barbastelle was recorded on the northern side of crossing point one during the dusk survey on 22 July 2020, however as the bat was not seen and it was not detected on the southern side of the underpass it cannot be determined whether this species crossed the A11 or not. Consultation with Natural England occurred during June to August 2020 on barbastelle bat mitigation and in essence their response was for us to use our professional judgement and "be most appropriate based on the available evidence". The mitigation proposed has been designed to account for all bat species recorded in the site surveys, and in line with relevant best practice guidance as far as possible.</p> <p>Regarding water vole mitigation, this is being developed during the detailed stage in consultation with NE.</p> <p><b>Biodiversity Net Gain</b></p> <p>The Applicant has addressed this in response 4.3 Post Hearing Submission including written summaries of Oral Case at Issue Specific Hearing 1 (REP3-019)</p>
<p>BIO.2.11</p>	<p>THE EMP covers the environmental commitments (mitigation and management) identified within the ES and will be updated as the scheme progresses. Following approval of the DCO, the EMP will be updated to include Appendix B.6 Landscape and Ecology Management Plan (LEMP). The objective of the LEMP is provided in Table B.1</p>	<p>The water vole mitigation is being developed during the detailed stage, in consultation with NE, and will be incorporated into the REAC.</p> <p>The Applicant can confirm the environmental barrier shown on environmental masterplan will be 3m in height. The environmental</p>

	<p>of REP4-020.</p> <p>The judgement of whether there is sufficient mitigation provision is one for the decision maker to consider alongside the likely effectiveness of the mitigation proposed. Mitigation for bats should be species specific.</p> <p>NCC note that a Letter of No Impediment (REP5-024) has been issued by Natural England for water voles, subject to additional mitigation measures – which should be incorporated within the scheme and the REAC.</p> <p>Concerns remain around the proposed mitigation for bats to address impacts of habitat fragmentation. As previously stated:</p> <ul style="list-style-type: none"> <li>• It is not clear if the environmental barrier identified in Table 3-1 of the REAC will be 3 m high or 3.5m high as shown on sheet 4 of 5 of the environmental masterplan (APP-123).</li> <li>• Trees along Cantley Lane will be lost – removing a linear landscape element along which bats commute (see APP-085 page 34) and sheet 4 of 5 of the Environmental Masterplan (APP-123) (see below overleaf.) There do not appear to be any plans to replant these.</li> </ul> <p>With regards to defining the effectiveness of bat mitigation measures it is suggested that they should only be characterised as effective if at least 90% of bats are using the structure to cross the road safely see Berthinussen &amp; Altringham (2015) 11. Monitoring should be designed to adequately address whether the mitigation measures are successful (eg. use thermal imaging).</p> <p>In addition:</p> <ul style="list-style-type: none"> <li>• The REAC Table 3-1 indicates that skylark nesting plots are an optional enhancement however these nest plots are required in part to mitigate loss of existing skylark territories (see APP-092) and should be a requirement.</li> <li>• Please note that woodland planting (LE2.1 EFB on drawing no. HE551492-GTY-ELS-000-DR-LX-30002 Document AS-032) will potentially be illuminated by the adjacent Thickthorn Park and Ride Extension reducing its value for wildlife.</li> </ul>	<p>masterplan will be updated by Deadline 8.</p> <p>As part of the Scheme design, an extensive Landscaping planting plan is proposed as shown on the Environmental Masterplan (<b>APP-123</b>). The amount or extent of new tree planting shown by the Environmental Masterplan (<b>APP-123</b>) is considered to represent the optimum quantum of new tree planting within the DCO boundary taking account of a full range of considerations including the landscape character context; gradients associated with the earthworks; health and safety in regard to future management; and other ecological objectives (for example the value in some locations of retaining some areas of habitat mosaic and open grassland).</p> <p>The EMP states ecological species that are to be licensed, will be monitored as part of the respective licence for the requisite length of time after construction completion. The report does not specify the methodology that will be used, but the Applicant can confirm this will be consistent with best practice methodology and utilise infra-red and thermal imaging technology where appropriate. The criteria for success would be recording the continued use of the crossing points identified by bats. The Applicant, during the process of developing the second iteration of the Environmental Management Plan pre-construction, under Requirement 4 of the dDCO (<b>APP-017</b>), will ensure that the monitoring commitments are developed to reflect the final detailed design and construction strategy taking into account the points detailed in section 4.1.1. of LA 108 Biodiversity.</p> <p>Mitigation associated with bats species will be developed as part of the Landscape and Ecology Management Plan (LEMP) at Stage 5. Delivery of these commitments, including consulting the relevant planning authority on the final landscaping design and second iteration of the Environmental Management Plan, will be secured through dDCO Requirements 4 'Environmental Management Plan' and 5 'Landscaping' (<b>APP-017</b>).</p> <p>The Applicant acknowledges the comments on Skylark nesting plots and will consider an update to the REAC ahead of Deadline 8.</p> <p>Any lighting designed as part of the adjacent Thickthorn Park and Ride Extension should be designed to appropriate standards, including directional lighting to minimise light spill on surrounding ecological receptors, including the mitigation proposed as part of this A47/A11 Thickthorn Junction Scheme.</p>
--	---	--