A47 Blofield to North Burlingham

Scheme Number: TR010040

Volume 8
8.3 Statement of Common Ground with Highways England and Norfolk County Council

Rule 8 (1)(e)

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

A47 Blofield to North Burlingham Development Consent Order 202[x]

Statement of Common Ground – Norfolk County Council

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Author:	A47 Blofield to North Burlingham Dualling Project Team, National Highways

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Rev 0	July 2021	Deadline 1
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Rev 2	November 2021	Deadline 7
Rev 3	December 2021	Deadline 9

STATEMENT OF COMMON GROUND

This statement of Common Ground has been prepared and agreed by (1) National Highways Limited and (2) Norfolk County Council

Signed …….

Name: Chris Griffin

Position: Programme Lead

On behalf of National Highways

Date: INSERT DATE

Signed …….

NAME

POSITION

On behalf of Norfolk County Council

Date: INSERT DATE

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1 INTRODUCTION

1.1 Purpose of this Document

1.1.1 This Statement of Common Ground (SOCG) relates to an application made by National Highways ("the Applicant") to the Planning Inspectorate ("PINS") under Section 37 of the Planning Act 2008 ("PA 2008") for a Development Consent Order (a "DCO"). If made the DCO would grant consent for the Applicant to undertake the A47 Blofield to North Burlingham Scheme ("the Scheme"). A detailed description of the Scheme can be found in the ES Chapter 2 The Proposed Scheme (**REP4-017**).

1.1.2 This SoCG does not seek to replicate information which is available elsewhere within the Application documents. All documents are available on the Planning Inspectorate website.

https://infrastructure.planninginspectorate.gov.uk/projects/eastern/a47-blofield-to-north-burlingham/

1.1.3 The SoCG has been produced to confirm to the Examining Authority where agreement has been reached between the parties to it, and where agreement has not (yet) been reached. SoCGs are an established means in the planning process of allowing all parties to identify and so focus on specific issues that may need to be addressed during the examination.

1.2 Parties to this Statement of Common Ground

1.2.1 This SoCG has been prepared by (1) National Highways as the Applicant and (2) Norfolk County Council (NCC).

1.2.2 National Highways (then named Highways England) became the Government-owned Strategic Highways Company on 1 April 2015. It is the highway authority in England for the strategic road network and has the necessary powers and duties to operate, manage, maintain and enhance the network. Regulatory powers remain with the Secretary of State. The legislation establishing National Highways made provision for all legal rights and obligations of the Highways Agency, including in respect of the Application, to be conferred upon or assumed by National Highways.

1.2.3 NCC is the Local Authority for the Scheme falling within Category A of section 43(1) of PA 2008 and are the highways authority for the Scheme, which falls entirely within the Council's administrative area.

1.3 Terminology

1.3.1 In the tables in Section 3 'Issues' of this SoCG the following terminology is used:

- "Agreed" indicates where the issue has been resolved
- "Not Agreed" indicates a final position
- "Under discussion" where these points will be the subject of on-going discussion wherever possible to resolve, or refine, the extent of disagreement between the parties.

1.3.2 It can be taken that any matters not specifically referred to in the Issues chapter of this SoCG are not of material interest or relevance to NCC, and therefore have not been the subject of any discussions between the parties. As such, those matters can be read as agreed, only to the extent that they are either not of material interest or relevance to NCC.

2 RECORD OF ENGAGEMENT

2.1.1 A summary of the meetings and correspondence that has taken place between National Highways and Norfolk County Council in relation to the Application is outlined in Table 2-1.

Table 2-1 : Record of Engagement

Date	Form of Correspondence:	Key topics discussed and key outcomes (the topics should align with the Issues tables)
	Statutory Consultation, Section 49 of PA 2008	A range of comments from both Norfolk County Council (NCC) and Highways England (HE) regarding the development in response to statutory consultation
07.03.2018	Letter	NCC provided comment in the Scoping Opinion.
24.05.2018	Meeting	Joint meeting with the EA and the Lead Local Flood Authority (LLFA)[1] which discussed flood risk and drainage including: • The LLFA had informal accounts of flooding on the A47 resulting from overland surface water flow paths. The Proposed Scheme must accommodate these flow paths through the use of 'dry culverts'. Siting of the culverts must be based on topographic survey rather than relying on LiDAR data. • The LLFA requested that NCC Highways department be consulted with regards to the nature of the pond at Lingwood Road and whether this receives highways runoff. • The LLFA stated that drainage design should be tested against a 40% allowance for climate change. • Any 'dry culverts' or alterations to ordinary watercourses would require consent from the LLFA. • The LLFA advised of the importance of reliable infiltration testing to inform the drainage design. • The assessment of climate change on groundwater features should take the form of a simple qualitative assessment. Currently Environment Agency (EA) projections suggest annual groundwater recharge would remain the same but with altered seasonal timing. The EA requested that proposed groundwater monitoring as part of the ground investigation (GI) should allow for monitoring of groundwater levels until at least spring 2019.

[1] Lead Local Flood Authority (LLFA) is Norfolk County Council

Date	Form of Correspondence:	Key topics discussed and key outcomes (the topics should align with the Issues tables)
19.10.2018	Meeting	Feedback was received from NCC and the parish councils and other key stakeholders including local landowners, interest groups and the local communities. This feedback provided insight into the key issues in the area for walking and cycling connectivity and numerous suggestions for improvement. Issues raised during these consultations have been taken into account to develop the design through design interventions.
12.12.2019	Meeting (conference call)	A multi-party meeting (SWECO, Galliford Try, NCC and HE) Traffic and Highways: A scheme overview.
19.12.2019	Meeting (conference call)	A multi-party meeting between Highways England, Sweco and NCC to discuss thoughts and issues surrounding Public Rights of Way, walking, and cycling trails.
01.02.2020	Email	NCC have been consulted regarding Barbastelle bats and the wider mitigation proposals for bats by the Proposed Scheme. In addition, bat mitigation implemented as part of the completed northern distributor road and the associated monitoring data was discussed. Data was exchanged on the locations of Barbastelle bats.
25.03.2020	Meeting (conference call)	A multi-party meeting (SWECO, Galliford Try, NCC and HE) Local Road Departures and Design Meeting. To discuss (a) departures from standard on Local Authority road network, (b) design speeds of local road network and (c) proposed road widths of local road network.
01.04.2020	Email	The NCC was invited to comment on the survey methodologies regarding the birds of the Proposed Scheme but did not respond.
17.04.2020	Meeting (conference call)	A multi-party meeting (SWECO, Galliford Try, NCC and HE) Local Road Departures and Design Meeting. To discuss (a) the Rejected Departure (DEP0013) and (b) cross section and classification of local road network.
23.04.2020	Email	NCC advised that Environmental Health is the remit of the local District Council in the area. The Environmental Health Department of Broadland District Council were consulted by Email on 23 April 2020. The consultation Email outlined the proposed approach to the assessment of noise and vibration due to the Proposed Scheme, advising that the assessment would be carried out in accordance with Design Manual for Roads and Bridges, (DMRB), Revision 2 LA 111 Noise and Vibration.
22.05.2020	Meeting (conference call)	Presentation on A47/Cucumber Lane roundabout Issues.
02.07.2020	Email	NCC were consulted on suitability of the uncertainty log developed for the traffic model for the cumulative effects assessment (CEA).
09.07.2020	Meeting	NCC were consulted on CEA methodology.

Date	Form of Correspondence:	Key topics discussed and key outcomes (the topics should align with the Issues tables)
16.07.2020	Email	Draft Drainage Strategy Report (DSR) provided to the LLFA for review.
17.07.2020	Meeting (conference call)	A multi-party meeting (NCC, HE, Galliford Try and SWECO) A47 Cucumber Lane Roundabout Option Assessment Meeting. Meeting to discuss the identified issues presented on 22/05/2020 A47/Cucumber Lane Roundabout from HE to NCC.
17.07.2020	Email	NCC provided additional developments to be considered in the cumulative long list. NCC also recommended contacting Suffolk CC as part of the consultation process for the CEA.
23.07.2020	Email	NCC was contacted regarding a mineral impact assessment as part of the materials and waste assessment chapter. The NCC confirmed the approach for the mineral impact assessment.
28.07.2020	Email	The DMRB published updated guidance that had been referenced in the proposed methodology section of the Environmental Impact Assessment (EIA) Scoping Report. Technical disciplines contacted the NCC to confirm changes to the proposed methodology to be adopted in the Environmental Statement (ES).
06.08.2020	Email	Draft Flood Risk Assessment (FRA) provided for review to LLFA.
06.08.2020	Letter	LLFA's comments received on the draft DSR.
14.08.2020	Letter	LLFA's comments received on the FRA (reissued on 24.09.2020).
21.08.2020	Email	NCC confirmed uncertainty log approach for CEA is suitable methodology.
15.09.2020	Letter	LLFA provided information on local flooding.
16.09.2020	Letter	Letter from the LLFA setting out recent consultation responses and comments on the FRA and the DSR. Refer to Appendix 1 for detailed technical points.
22.09.2020	Email	Draft Groundwater Assessment provided to the LLFA for review.
24.09.2020	Meeting	Meeting to discuss Highways England’s response to the LLFA's comments on the DSR and the FRA.
25.09.2020	Meeting	Meeting to discuss Highways England’s response to the LLFA's comments on the DSR and the FRA continued.
07.10.2020	Letter	NCC letter setting out outstanding matters following meeting on 24 & 25 September to discuss comments on the DSR and the FRA.
07.10.2020	Letter	NCC provided comments on the Groundwater Assessment.

Date	Form of Correspondence:	Key topics discussed and key outcomes (the topics should align with the Issues tables)
08.10.2020	Email	Highways England's response to NCC's comments on the draft Groundwater Assessment.
08.10.2020	e-mail (David Cummings)	Draft response to Highways England consultation.
22.10.2020	Letter	Response to Highways England email of 8 October 2020 in relation to the Groundwater Assessment.
27.10.2020	Email	Highways England correspondence regarding embankment drainage in reply to letter of 07.10.2020 from NCC.
30.10.2020	Email	Meeting to discuss the archaeological trenching results and to obtain an agreement regarding the study area methodology with the NCC.
06.11.2020	Meeting (conference call)	A multi-party meeting between Highways England, Carter Jonas, WBD, Sweco to review the first draft of the DCO document shared with Norfolk County Council.
12.11.2020	Meeting (conference call)	A multi-party meeting between Highways England, Carter Jonas, WBD, Sweco and Broadland District Council. To discuss the A47 Blofield DCO with Broadland District Council Planning Officer
13.11.2020	Meeting (conference call)	A meeting between Highways England, Sweco and Norfolk County Council to discuss the de-trunking and adoption plans with NCC.
20.11.2020	Meeting (conference call)	A meeting between Highways England, Sweco and Norfolk County Council to discuss planned Walking Cycling and Horse-Riding facilities.
30.11.2020	Email	NCC responded to email of 27.10.2020 with their position on embankment drainage.
03.12.2020	Email	Highways England provided the FRA and DSR by email for review to LLFA.
22.12.2020	Letter	With reference to the FRA and DSR provided by email on 03.12.2020 for review, the LLFA outlined some final points setting out the status for drainage and flood reporting on the Proposed Scheme and some final matters to be discussed.
16.02.2021	Meeting (conference call)	Meeting between Highways England, NCC and Sweco: To update and review A47 Blofield progress and areas for adoption. In particular, to discuss outstanding areas prior to examination, in the events that representations made during the examination period.
16.03.2021	Meeting (conference call)	Follow up meeting to 16/02/2021 between Highways England, Sweco and Norfolk County Council. To discuss outstanding matters in relation to adoption and commuted sums.

Date	Form of Correspondence:	Key topics discussed and key outcomes (the topics should align with the Issues tables)
18.03.2021	Meeting	Meeting between Highways England's Flood Lead and Drainage Lead with LLFA to resolve remaining LLFA comments on the FRA and DSR.
31.03.2021	Response to DCO application	Norfolk County Council Comments on the A47 Blofield to North Burlingham Dualling
13/04/2021	Meeting (conference call)	Follow up meeting to 16/03/2021 between Highways England, Sweco and Norfolk County Council. To discuss outstanding matters in relation to adoption and commuted sums.
23/04/2021	Email	Drafted SoCG Environment sent to NCC
11/05/2021	Meeting (conference call)	Follow up meeting to 13/04/2021 between Highways England, Sweco and Norfolk County Council. To discuss outstanding matters in relation to adoption and commuted sums.
02/06/2021	Meeting (conference call)	Meeting between Sweco and Norfolk County Council to discuss adoption standards.
21/06/2021	Meeting (conference call)	Meeting between Sweco and Norfolk County Council to discuss adoption standards.
21/06/2021	Meeting (conference call)	Discussion on SoCG Environment
05/08/2021	Meeting (conference call)	Meeting between Highways England, Sweco and Norfolk County Council to discuss SoCG and transfer of assets.
13/08/2021	Meeting (conference call)	Meeting between Highways England, Galliford Try, Sweco and Norfolk County Council to discuss de-trunking and transfer of assets for A47 schemes.
24/09/21	Meeting (conference call)	Meeting between Highways England, Galliford Try, Sweco and Norfolk County Council to discuss de-trunking and transfer of assets for A47 schemes.
29/10/21	Meeting (conference call)	Meeting between Sweco and Norfolk County Council to asset plans.
10/21	Email (various)	Email correspondence in relation to matter in the SoCG between Norfolk County Council, National Highways, Galliford Try and Sweco
05/11/21	Meeting (conference call)	Meeting between Sweco and Norfolk County Council to discuss de-trunking and transfer of assets for A47 schemes.
19/11/21	Meeting (conference call)	Meeting between Highways England, Galliford Try, Sweco and Norfolk County Council to discuss de-trunking and transfer of assets for A47 schemes.

Date	Form of Correspondence:	Key topics discussed and key outcomes (the topics should align with the Issues tables)
11/21	Email (various)	Email correspondence in relation to matter in the SoCG between Norfolk County Council, National Highways, Galliford Try and Sweco
03/12/21	Meeting (conference call)	Meeting between Highways England, Galliford Try, Sweco and Norfolk County Council to discuss de-trunking and transfer of assets for A47 schemes.
12/21	Email (various)	Email correspondence in relation to matter in the SoCG between Norfolk County Council, National Highways, Galliford Try and Sweco

2.1.1 It is agreed that this is an accurate record of the key meetings and consultation undertaken between (1) National Highways and (2) Norfolk County Council in relation to the issues addressed in this SoCG.

3 ISSUES

3.1 Included within the Statutory Consultation response, but does not appear within the relevant representation of 31/03/21

Table 3-1 : Issues

Issue	Document Reference (if relevant)	Norfolk County Council Comment	National Highways Response	Status	Date
Dualling priorities for NCC		Together with the proposals also in RIS1 for dualling between Easton and Tuddenham this will create a dual carriageway link all the way from Dereham, via Norwich, to Acle. We believe that, for RIS2, dualling of the link to Great Yarmouth should be completed by dualling the A47 Acle Straight. This, and dualling between Tilney and East Winch, this are Norfolk County Council priorities for RIS2.	National Highways has noted these comments from Norfolk County Council	Agreed – this is a statement and therefore no action required.	05.08.21
Housing opportunities		and should help to accelerate the delivery of significant amounts of housing.	National Highways note this comment.	Agreed – this is a statement and therefore no action required.	05.08.21
Standards & Compliance		For the final scheme, the County Council would expect the proposals to include full details of construction and compliance with nationally recognised standards, which would ensure that the road improvement is fit for purpose	This information can be found in Environmental Statement (Application document 6.1) and the Environmental Management Plan (Application document 7.8). The scheme is designed in accordance with national standards, including the Design Manual for Roads and Bridges (DMRB).	Agreed	05.08.21
Biodiversity Some important sources are omitted from section 8.2.1.		References to the guidance and best practice used in the biodiversity assessment (section 8.2.1.) are noted. This is as expected although some important sources are not mentioned, notably BS42020:2013 Biodiversity - Code of practice for planning and development, and the industry best practice guidance relating to Environmental Impact Assessment Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018). Compliance with these documents would provide greater confidence in the reporting and conclusions drawn.	This is covered in the Environmental Statement (Application document 6.1) and the Habitat Regulations Assessment (Application document 6.11).	Agreed	29.06.21
County Controlled Traffic Flows		The consultation material does not include any traffic flow information showing predicted changes to traffic levels on local County Council controlled roads within the vicinity of the proposed improvement	The predicted changes to traffic levels within the vicinity of the Scheme area have been provided to Norfolk County Council.	Agreed	24.06.21
Network upgrades		The LLFA would welcome that the existing drainage schemes are upgraded to the same standard as the proposed scheme where possible.	The design does not allow for the upgrade of the existing drainage outside of the Scheme extents. However, where there is a direct interaction between the design and the existing drainage network, this will be upgraded to the same standard.	Agreed	24.06.21
Drainage Routes		LLFA state that it is unclear if section 2.4.17 of the PEIR is suggesting that greenfield runoff as well as informal drainage and overland flow routes (from the Environment Agency Risk of Surface Water flood map) will be considered, diverted or remain on a natural pathway. Clarification on what will be diverted and what will remain on a natural pathway would be welcome.	Surface water pathways as shown on the Environment Agency Risk of Surface Water Flood Map will be maintained along existing routes where these cross the Scheme. Additional mapping indicating more detail on existing surface water pathways provided by Norfolk County Council aligns with the overland flow drainage design provided for the scheme, with only slight diversions of the existing pathways required to collect these flows and align with the road crossings provided for overland flow drainage.	Agreed	24.06.21
Waste Management site availability		The Waste Planning Authority notes the contents of Table 10.1 (Licenced Waste Management Facilities). However, the Waste Planning Authority would caution that a number of these sites are not currently operational for the acceptance of waste; even though they still have a valid Environmental Permit from the Environment Agency. Highways England should ascertain that waste management sites that they may wish to utilise for the management of waste are operational and are accepting waste before their inclusion in Table 10.1	Table 10.1 within the Preliminary Environmental Impact Report (dated August 2018) was based on baseline data available in 2018 and it is appreciated that a number of these sites may not be operational for the acceptance of waste at the time of construction. Impact of waste in accordance with DMRB LA 110 is considered in the Environmental Statement (Application document 6.1).	Agreed	28.05.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	National Highways Response	Status	Date
Run-off pathway		Lead Local Flood Authority (LLFA) state that it is unclear if section 2.4.17 of the PEIR is suggesting that greenfield runoff as well as informal drainage and overland flow routes (from the Environment Agency Risk of Surface Water flood map) will be considered, diverted or remain on a natural pathway. Clarification on what will be diverted and what will remain on a natural pathway would be welcome.	Surface water pathways as shown on the Environment Agency Risk of Surface Water Flood Map will be maintained along existing routes where these cross the Scheme. Additional mapping indicating more detail on existing surface water pathways provided by Norfolk County Council aligns with the overland flow drainage design provided for the scheme, with only slight diversions of the existing pathways required to collect these flows and align with the road crossings provided for overland flow drainage.	Agreed	24.06.21
Water quality of road run-off		LLFA request that a robust water quality assessment of road runoff is provided, and that the Sustainable Drainage System (SuDS) Manual (2015) is consulted and followed for the worst case pollution hazard anticipated. LLFA highlight that proprietary systems such as oil interceptors are not considered to be a SuDS treatment step and would request that any sole reliance on these prior to discharge without any SuDS water quality treatment components be supported by appropriate bespoke water quality assessments and permits which might be required from the Environment Agency.	The SUDS Manual C753 was consulted and followed for pollution control. All appropriate water quality considerations (including risk assessment) are detailed in the Environmental Statement (Application document 6.1).	Agreed	05.07.21
Storm allowance for run-off		LLFA note that several soakaways and an attenuation basin are proposed but no calculations are provided at this stage.	This is covered in the Drainage Impact Assessment section of the Environmental Impact Assessment (Application document 6.1). Storm events were modelled with 20% and 40% allowances for climate change.	Agreed	05.07.21
Current flood locations		Flooding on the existing A47 at the location of where the Environment Agency Risk of Surface Water Flood Map crosses the road should be reviewed and improvements made where possible.	This has been reviewed, and surface water flooding pathways have been accommodated in the design of the Scheme.	Agreed	24.06.21
Tree planting		Some screening could also be used to further enhance the route, this would be more attractive for families with pushchairs, cyclists and dog walkers who are all looking to access the woods to the north.	The inclusion of planting has taken into account the visual amenity of users of the network of Public Rights of Way and Burlingham Woodland Walks to the north of the Scheme. Proposed planting treatments and their environmental mitigation functions are defined Scheme Environmental Masterplan and includes a combination of hedgerows, trees and woodland groups as appropriate to the location to contribute to screening and integration of the Scheme.	Agreed	30.06.21
Local Character features		The Baseline Data, section 7.5, identifies the broad National Character Area as well as the Local Landscape Character areas. Whilst these are useful in considering the wider context and surrounding landscape, the summary of Landscape Features provided in 7.5.5 appears quite brief and lacks detail in comparison. This could benefit from further detail reflecting the Local Landscape Character areas, which outlines how the landscape changes along the route.	This point has been acknowledged by the inclusion of assessment specific landscape character areas which recognise the character changes along the route. Reference to landscape features has been extended to provide further detail. The landscape and visual assessment of the Scheme is included in the Environmental Statement (Application document 6.1)	Agreed	29.10.21
Visibility modelling distances		The county council also agrees that the 1km study area should be appropriate, although it is possible that further into the process this area could be deemed as too restrictive and some further views may need taking into consideration. This is due to the open nature of the surrounding landscape and potential for long distance views. Existing vegetation data was not available at the point of this assessment; however this will be important in considering the extent of vegetation loss and potential impact on views.	The 1km study area has been tested by digital Zone of Theoretical Visibility modelling and site walkover validation of views and is confirmed as representing an appropriate extent within which to assess the potential for landscape and visual effects. The landscape and visual assessment of the Proposed Scheme is included in the Environmental Statement (Application document 6.1)	Agreed	29.10.21
Landscape character impacts		Impacts on local landscape character are likely during both the construction and operational phases as a result of the enlarged junctions and overbridges within a relatively flat and open landscape.	This observation is acknowledged and reported in the assessment presented in the Environmental Statement (Application document 6.1).	Agreed	29.10.21
PEIR – reporting detail		Much of the ecology information in the Preliminary Environmental Information Report (PEIR) is in summarised form (eg the great crested	Norfolk County Council have been contacted.	Agreed	29.06.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	National Highways Response	Status	Date
		newt Habitat Suitability Index assessments); the county council would wish to see the original reports before being able to say if it supports the assessments.	Survey results will be provided within the Environmental Statement (Application document 6.1)		
PEIR - Visual assessment		Paragraph 7.2.1 of the PEIR notes the various sources referred to as best practice guidelines, which have informed the methodology of Highways England's assessment. These are considered appropriate for this type of landscape and visual assessment. The county council also agrees that the 1km study area should be appropriate.	National Highways noted this comment. The landscape and visual assessment of the Proposed Scheme is included in the Environmental Statement (Application document 6.1).	Agreed	29.10.21
PEIR - Planting and screening		The PEIR sets out that potential landscape impacts include the removal of existing vegetation, earthworks and presence of construction plant, materials, machinery, compounds and lighting during construction. As part of the mitigation, Highways England will produce a detailed planting design to integrate the design into the surrounding landscape. This will include considerations for amenity like visual screening and biodiversity.	The landscape design is reflected in the Environmental Masterplan which defines the elements and functions of the environmental components of the Scheme. This includes the identification of visual screening and biodiversity objectives.	Agreed	29.10.21
Public Health – Air Quality		It is anticipated that matters relating to, for example, air quality and site and dust management, would be managed by other statutory agencies such as the Environment Agency and Broadland District Council.		Agreed	29.06.21

3.2 Discussed at meetings but not included within the Relevant Representation of 31/03/2021

Design

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
The Windle		NCC have concerns about the approach speed to The Windle junction. The central reservation at the Windle was not part of the scheme, however, HE may look to close this in the future.	The scheme will improve the safety of The Windle junction by: 1) Closing the lay-by Closing the lay-by to the west of The Windle removes the risk of side swipe and shunt type collisions currently associated with the short weaving length between the lay-by and The Windle. 2) Providing advanced direction signing The current junction does not have any advanced direction signing which would warn drivers of the approaching junction for either vehicles turning into, or exiting, the junction. The closure of the lay-by enables this signing to be introduced. 3) Provision of the new dual carriageway The continuity of the dual carriageway will provide a more free-flowing network, where currently The Windle junction sits at the start of a section of dual carriageway where vehicles will often be "platooned" behind slower vehicles and will be accelerating in lane two to pass before the end of the dual carriageway at Acle.		
NCC standards and departures from standards		NCC confirmed that the NCC standards and departures from standards are based on the Road Safety Audit Process.		Agreed	28/05/21
Narrowing of Southbound verge from 2.5m to 0.6m. Safety, cost and maintenance issues.		NCC will not accept the narrowing of the Southbound verge from 2.5m to 0.6m, per departure 0013 (DEP0013), due to reduced safety width, reduced maintenance space for operative parking and the cost of maintenance to NCC should the parapet be damaged. Should audio-tactile edge line be installed in addition to the 1.0m hard strip, the minimum verge width accepted by NCC would be 1.0m.	• It was noted that HE will retain ownership of the parapet.	Agreed	28/05/21
Access Track to NCF		It was flagged as a risk that the area could be used for unauthorised encampment.		Agreed	24.06.21
Departures from standard on Local Authority road network		No concerns have been raised by NCC in relation to the following departures from Standard on the Local Authority Road Network. • DEP 0001 Left-out merge radius at Yarmouth Junction. • DEP 0002 Visibility at junction intersecting with Yarmouth Road. • DEP 0007 Centreline radius and no trans at High Noon Lane tie in. • DEP 0008 Centreline radius at junction tie in to CGSJ overbridge. • DEP 0009 Centreline radius at Main Road junction. • DEP 0010 No trans along de-trunked A47 connection to CGSJ overbridge. • DEP 0011 Centreline radius at junction tie in to Skew overbridge.		Agreed	28.05.21
No Trans along B1140 northbound link (DEP005)		NCC request to see approach speeds within traffic surveys, to determine support for speed change. Change requested as a result of introduction of a compact grade-separated junction.	Departure has been agreed with NCC	Agreed	09.11.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Bridge Width		NCC queried the Bridge width, SWECO noted that the bridge width itself would not reduce due to the visibility requirements, but that cross section is still to be discussed.	6m carriageway width has been agreed for B1140 and de-trunked A47. 6m will also be maintained over Blofield overbridge.	Agreed	09.11.21
Western end junction		This is not a fully grade separated junction. Local impacts are now known and NCC look to agree any minor changes to county roads because of the scheme.	The Scheme Design Report (**REP1-047**) sets out the justification for the junction at Yarmouth Road and details the options considered. An all-movements junction was discounted due to the low use of the existing junction arrangement in the forecast future years do-minimum scenario with the strategic traffic model.	Agreed	08.12.21
Design Overview Scheme overview provided: outstanding queries/issues noted.	HE551490-GTY-HML-000-DR-CH-30035_P01	There will be a gap on the Yarmouth Road southern footway by the Blofield Farm Shop (to Shreeve Road)	The proposed footway ties into the existing footway on the northern side of Yarmouth Road, before crossing to the southern side beyond the garden centre. Any extension on the southern side would be outside the red line and DCO boundary.		
B1140 width Is width suitable for heavy agricultural transport.		Regarding the B1140, has 6m width been agreed? This is used by heavy agricultural vehicles to transport to the sugar beet factory in Cantley. There is 2-way flow of vehicles from September to March.		Agreed	28.05.21
B1140 junction with South Walsham Road		Suggested that the island on the north turning traffic could be removed to allow greater turning.	The proposed island is a ghost island and therefore will not hinder turning.		
Road / Overbridge widths		Overbridge at eastern end of scheme appears to be 0.5m too narrow.	The cross-section of the carriageway (6m) has now been agreed and a verge of 1m has been provided on the eastern edge (as agreed in DEP-0013)	Agreed	09.11.21
HGV and Bus movements		NCC to determine the future volume of HGV and bus movements			
Overbridge streetlighting		Noted that NCC preferred no streetlighting.	National Highways will endeavour to minimise street lighting, within the constraints of the design, during the detailed design phase. Any lighting will be considered with the assets to be transferred to NCC.		

Adoption & Ownership

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Layby Ownership		The ownership of the decommissioned layby will be discussed / agreed prior to DCO application.	The lay-by would remain as a National Highways Asset.		
Tree Ownership Ownership has yet to be agreed.		NCC wish to understand the condition of these trees.	There will be transfer of tree ownership from HE to NCC. National Highways to prepare plans to clarify the proposed transfer of assets.	Under discussion	
Carriageway ownership Boundaries		Clarification is required around the points at which HE ownership ceases and NCC commences • Clarification required surrounding ownership boundaries between NCC and HE. E.g. Carriageway joint lines, side road orders.	National Highways to prepare plans to clarify the proposed transfer of assets.	Under discussion	
Carriageway ownership Boundaries		• NCC require Drainage plans are for current / future A47. • NCC require a 6m carriageway for trunk road in the event of diversions.	The proposed draft asset plans have been shared (25.10.21) and discussed on 29.10.21. This is ongoing.	Under discussion	
Access track to NCF PROW or Highway status		NCC query whether this is PROW or Highway. This is a PROW and a private road to the fields.	On the Southern side of the new A47, there is an access road with footway, leading onto a private means of access (agricultural access track), with cycle track proposed to be maintained by National Highways.	Agreed	29.10.21
Bridge at B1140		Suggested that HE will retain the bridge ownership, with NCC taking responsibility for the road on the bridge.	National Highways will retain ownership of the bridge, including parapets.	Agreed	30.06.21

Congestion

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Traffic Data Surveys There is a concern the scheme will introduce congestion to local network upon opening.		NCC have noted concerns around congestion and traffic flows: • through Blofield • through The Windle at the A47/Cucumber Lane junction.	Traffic data surveys completed in October 2019 and the process of incorporating that data into revised traffic forecasting data has been presented to NCC.	Agreed	24.06.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Changes in traffic levels and impacts to vicinity. Changes in traffic levels and impacts to vicinity.		It is clear though that there will be an impact, perhaps particularly at the link bridge over the existing A47 to connect it to Yarmouth Road at the western end of the scheme since the junction does not provide for all movements. We would need to understand fully the predicted changes to traffic levels to determine if there is an impact with traffic on the local settlements for example through Blofield, and what improvements might be required, and where.	The predicted changes to traffic levels within the vicinity of the Scheme area have been provided to Norfolk County Council.	Agreed	24.06.21
Proposal impact to local network and community. Ongoing co-operation is required to understand the impact to the network.		Since the S42 consultation NCC have engaged with Highways England to understand the proposal's impact on the local road network and on local communities. NCC would want to continue to work with HE on this.		Agreed	24.06.21

Drainage and Flooding

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Flood Risk Assessment (see appendix 1 for full technical details)	FW_2020_0688 / Appendix 1	LLFA guidance is not mentioned in the FRA. The FRA has not included any consideration of the future maintenance and management provisions proposed for the surface water management features and structures. This should be clarified in the revised FRA report.	National Highways have provided an updated FRA, including a draft Outline Water Monitoring and Management Plan.	Agreed	18.10.21
Drainage Strategy (see appendix 1 for full technical details) There are a number of recommendations which need to be considered as part of LLFA response.	FW_2020_0688 / Appendix 1	1. The drainage design does not meet the requirement for the surface water drainage to attenuate the 1% AEP (1 in 100 year) plus climate change event. 2. The LLFA recommends the attenuation provided in the infiltration basin and soakaways proposed drainage design is reviewed and brought into accordance with these standards. 3. In future drawing and report revisions, the half drain times are expected to be provided. 4. Clarification required: space in relation to the positioning of the soakaways and whether the distances between the soakaways, the basin and the properties are appropriate? The LLFA will await the submission of appropriate supporting evidence. 5. Swales a. Use as vehicle access is unusual. b. No outline design information has been provided.	The Drainage Strategy (**REP4-031)** has been updated to address comments.	1. Agreed 2. Agreed 3. Agreed 4. Agreed 5. Agreed –Further design information to be provided in the detailed design stage.	05.07.21 05.07.21 05.07.21 05.07.21 05.07.21
Drainage Strategy	FW_2020_0688 / Appendix 1	6. What are the drainage design constraints to the footpaths and what options have been discounted to manage footpath run-off?	Where footpaths are included in the design, the road run-off would have to be drained into kerb and gulley systems instead of filter drains. This will	6. Agreed	15.12.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
			be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.		
Drainage Strategy	FW_2020_0688 / Appendix 1	7. Where the existing carriageway is unchanged LFAA would be interested in the Water Quality Management due to the predicted increase in traffic volumes. Has an assessment been undertaken? 8. Are vortex interceptors and dedicated spillage containment tanks included within the design?		7. Agreed 8. Agreed	18.10.21
Drainage Strategy	FW_2020_0688 / Appendix 1	9. Are there to be any remedial works within the unchanged systems?	Further surveys will be undertaken during detailed design to confirm if any remedial works are required. The Drainage Strategy confirms in section 9.7.1 that "Where it is proposed to utilise existing drainage, remedial works may be required, which could include flushing and minor repairs/replacement of existing pipes and chambers". Further details will be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.	9. Agreed	15.12.21
Drainage Strategy	FW_2020_0688 / Appendix 1	10. The LLFA can confirm that the infiltration testing would be required to the area north of the eastern tie in. When will this occur?	Infiltration testing was carried out in Apr-Jun and the results are currently being reviewed for input into detailed design. Further details will be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.	10. Agreed	15.12.21
Drainage Strategy	FW_2020_0688 / Appendix 1	11. Clarification around maintenance and ownership to be obtained, e.g. drivable swales, dry culverts and drainage from the allotments. 12. Information is required about the construction phase drainage works along with any temporary measures.		11. Agreed 12. Agreed	05.07.21 05.07.21
Groundwater Assessment	FW_2020_0688 / Appendix 1	No Groundwater assessment has been provided for review.		Agreed	24.06.21
Southern Infiltration basin	2.7 Drainage and Surface Water Plans	Query as to whether piped or surface run off.	• Confirmed piped, drainage plans shared. • Low point highlighted in vicinity. Maintenance liability agreements required going forward.	Agreed	05.07.21
Adoption of Drainage		NCC thoughts around drainage are that this should be retained under HE ownership, including infiltration basins, where possible.	Agreed that this requires agreement.	Agreed	05.07.21

Construction

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Surface Course		The surface course type to be discussed once construction programme and the design is further developed.	The surface course is proposed to be low noise surfacing.	Agreed	06.12.21
Programme		An indicative programme to determine forward works and development to be shared with NCC.		Under discussion	

Archaeology

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Requirements		NCC have suggest that a suite of requirements is put in place encompassing Scheme of Investigation (SoI), development and land occupation in line with SoI. A) No development shall take place until an archaeological written scheme of investigation that has been submitted to and certified by the Secretary of State. The scheme shall include an assessment of significance and research questions; and 1) The programme and methodology of site investigation and recording, 2) The programme for post investigation assessment, 3) Provision to be made for analysis of the site investigation and recording, 4) Provision to be made for publication and dissemination of the analysis and records of the site investigation, 5) Provision to be made for archive deposition of the analysis and records of the site investigation and 6) Nomination of a competent person or persons/organization to undertake the works set out within the written scheme of investigation. And B) No development shall take place other than in accordance with the written scheme of investigation approved under requirement (A) and C) The development shall not be occupied or put into first use until the site investigation and post investigation assessment has been completed in accordance with the programme set out in the archaeological written scheme of investigation approved under condition (A) and the provision to be made for analysis, publication and dissemination of results and archive deposition has been secured.		Agreed	28.06.21

Walking, Cycling and Horse-riding

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Burlingham Woods		It was noted that there is planned development at Burlingham Woods in relation to the local Green Infrastructure Plan.	Noted	Agreed – this is a statement and therefore no action required.	15.12.21
Shared use Footpath/way		Lack of agreement on shared usage footpath width and constraints NCC would expect these to be 3.0m for shared cycle/footways.	The current plans for shared footways width are 2.5m. Discussion on the constraint for the provided shared use path width, this being (a) the design speed of the retained and de-trunked A47 and (b) the trees along the highway boundary. Ongoing discussion.	Under discussion	
Parish Council Proposals		The Parish Council (NB & Lingwood) proposed a walking or shared use crossing of the B1140 junction and potential use of the decommissioned layby and A47 for an additional walking facility. These are under review, subject to departures and WCHR assessment outcome. NCC's support for using the decommissioned layby for such a use was noted.	The Applicant has investigated the potential for a footway connection between North Burlingham and Acle in the vicinity of The Windle. At the pinch point adjacent to the Hall Cottages, there is insufficient width to provide a footway / cycletrack of the required standard. This takes into consideration the alignment of the existing A47, the proposed noise barrier, vehicle restraint system and provision of adequate visibility from The Windle junction.		
Designated Funds		Application for designated funds for crossing at North Burlingham has not been progressed.	Previous Designated Funds applications did not progress due to the closure of the Road Investment Period 1 (RIP 1) and that HE are waiting on the definition of the RIP 2 Designated Funds, should they be included in the RIP 2 settlement by the Department for Transport.	Under discussion	

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
		An application for designated funds was made in relation to a footbridge to improve connectivity between Lingwood and North Burlingham. This appears to have fallen by the wayside.			
Western end of scheme – ProW Isolated PRoW		At the west end of the section near the Blofield Farm and Social Club, there is an isolated PRoW and this should have been addressed at the time of previous dualling.	This PRoW is unaffected by this scheme.	Agreed	14.12.21
Southern Links at White House Junction.		At the White House Junction, there are no continuing non-road links going south from this point. Northern connections are good, southern requires improvement and route at FP3 to improve severed parish.			
Permissive Footpaths and scheme footways		Surface, users (pedestrians / cyclists and horse riders) and status of footpath/PRoW from east to west requires clarification.	The route from Blofield Overbridge to North Burlingham, then on to the B1140 overbridge will be a shared use faciltiy, suitable for cyclists and pedestrians. This is adjacent to the road and will be surfaced. The east-west link from Blofield Overfield to B1140, to the south of the scheme, will also be a shared use facility, suitable for cyclists and pedestrians. This will be an unbound surface.	Agreed	14.12.21
Local User Forums		Identification of and engagement with local user groups (walking and cycling) has been discussed.	Noted	Agreed – this is a statement and therefore no action required.	15.12.21

Environment

Issue	Document reference	Norfolk County Council Comment	Applicant's Response	Status	Date
Mineral Impact Assessment	ES chapter 10: Material assets and waste	The proposed route alignment shown in the DCO boundary contains small areas that have been identified as safeguarded mineral resources (sand and gravel) in the Norfolk Minerals and Waste Local Plan. A list of the active safeguarded mineral and waste sites can be found on the council's website at: [redacted] NCC has outlined the approach to the mineral impact assessment.	Chapter 10 of the ES, Material assets and waste has assessed the impact on safeguarded mineral resources as identified in the Norfolk Minerals and Waste Development Framework. The chapter also assesses landfill capacity and disposal to landfill requirements. Appendix 10.4 to the ES, Mineral Impact Assessment, assesses the effects of the Proposed Scheme onto any potential sterilization of mineral sites and peat resources. Mineral safeguarding sites have been identified and assessed within this Appendix. The approach to the minerals impact assessment is in accordance with that outlined by NCC.	Agreed	02.11.21
Archaeological trenching results and study area methodology	ES	It was stated that that the consultee had no issues with the scope and extent of the study area.	Noted	Agreed – this is a statement and therefore no action required.	02.11.21
Uncertainty Traffic log	ES chapter	NCC confirmed that uncertainty log approach was suitable methodology for CEA on all A47 schemes.	Noted.	Agreed – this is a statement and therefore no action required.	02.11.21

Issue	Document reference	Norfolk County Council Comment	Applicant's Response	Status	Date
Approach of the CEA methodology	ES chapter	NCC attended the meeting to confirm the approach of the CEA and to incorporate any further inputs. All parties agreed the methodology adopted for the assessment was appropriate.	Noted	Agreed – this is a statement and therefore no action required.	02.11.21
List of other developments	ES chapter	NCC recommended five additional projects to be considered.	Of the five additional projects, four of the windfarms where outside of the study area and not considered further. The remaining project, the Third River Crossing project, has been carried forward into the short list of the assessment.	Agreed	08.12.21
Scoping Opinion	Section 13.7 of Chapter 13 Road Drainage and the Water Environment of the ES.	Information provided on flooding in the summer of 2014 at the location of the overland flow path shown on EA surface water mapping. It was detailed that following an investigation, the source of the flooding was unknown. The incident however highlighted that the design of the Proposed Scheme should carefully consider and propose mitigation to avoid the overland flow path. Links were provided to the Norfolk surface water management strategy and plan for the urban area. The following issues detailed to be considered for the development and addressed: FRA/surface water DSR identifying local sources of flood risk and how surface water drainage will be managed to ensure there is no increase in flood risk. In particular to consider: • Sustainable Drainage System (SuDS) prioritised in the order of surface water discharge to: shallow infiltration; watercourse; sewer; combined sewer/deep infiltration generally greater than 2m bgl. • Consider flood risk sources: fluvial, surface water and groundwater flood risk. • SuDS to manage flood risk and address water quality. • Noting the absence of watercourses crossing the Proposed Scheme, all appropriate permissions to be sought to reach any outlying watercourses and the responsibility to maintain same to be established. • Provision of surface water modelling of overland flow routes and mitigation, to include dry culverts sized for 1 in 100 years plus climate change allowance. • At least one feasible proposal for the disposal of surface water to be demonstrated. • Infiltration testing to be undertaken in accordance with Building Research Establishment (BRE) Digest 365. • Post development runoff to be attenuated at predevelopment greenfield rates up to the 1 in 100-year return period storm plus climate change. • Any existing formal or informal drainage to be maintained or accommodated. It is noted that the EIA Scoping Report, February 2018 indicated historical flooding on the existing highway and	All feedback from the NCC was considered in the development of the drainage design and mitigation for flood risk. Overland flow paths were considered and accommodated in the drainage design. Dry Culverts were designed for the 1 in 100 year plus 65% climate change event. An FRA and DSR were prepared. The EA were consulted on discharge to infiltration features deeper than 2m bgl. Infiltration testing was undertaken to BRE Digest 365. Infiltration features were designed to attenuate the 1 in 100-year return period storm from road run-off including a 40% allowance for climate change. Attenuation features are not located in a floodplain or in a Source Protection Zone (SPZ). A maintenance and management plan is included in the DSR. The GI concluded that no ponds that are to be infilled are groundwater fed. SuDS incorporated into the drainage design in the form of filter drains, an infiltration basin, and soakaways. Further surveys will be undertaken during Detailed Design. LLFA will be consulted on DSR under Requirement 8 of the DCO, prior to commencement.	Agreed	18.10.21

Issue	Document reference	Norfolk County Council Comment	Applicant's Response	Status	Date
		identifies the same area of flood risk for surface water as in the EA flood map. • Flow paths crossing the existing and proposed road to be assessed. Any ordinary watercourse/ditch crossing the Proposed Scheme to be assessed and modelled if appropriate. Suggestions for consideration include: • A site walkover; • modelling to include tributaries if applicable; topographical survey to include floodplains; • New culverts across tributaries and dry culverts conveying surface water to be designed to pass the 100 year plus climate change allowance; replacing existing culverts to take account of impacts of additional flows downstream and ensure no increase in flood risk; • New drainage to include SuDS, manage flood risk and provide water quality mitigation; • New drainage infrastructure providing attenuation to be outside the 100-year floodplain. Ordinary Watercourse Consent applications to show how flow will be managed and how flood risk will not be increased. Link to LLFA guidance on prevention of the increase in flood risk for development provided. Advised to maintain or divert any existing formal or informal drainage. Flows relating to ponds to be infilled to be managed and mitigation provided if they are groundwater fed. The LLFA welcomed that the FRA would include a DSR and requested that the drainage scheme be tested for 20% and 40% climate change. The LLFA noted that the existing drainage would only be used at tie-ins. It was requested that measures are put in place to minimise temporary additional runoff and that this would be diverted away from the final drainage scheme to avoid siltation. The DSR to include a maintenance and management plan and identify the responsible authority who will adopt and maintain the features. The LLFA stated that the approval of LLFA as NCC to be applied for in respect of any likely affects in an ordinary watercourse.			
Various Matters - flood risk and drainage	N/A	At the joint meeting with the EA and the LLFA, which discussed flood risk and drainage the following points were made: • The LLFA had informal accounts of flooding on the A47 resulting from overland surface water flow paths. The Proposed Scheme must accommodate these flow paths through the use of 'dry culverts'. Siting of the culverts must be based on topographic survey rather than relying on LiDAR data. • The LLFA requested that NCC's Highways department be consulted with regards to the nature of the pond at Lingwood Road and whether this receives highways runoff. • The LLFA stated that drainage design should be tested against a 40% allowance for climate change. • Any 'dry culverts' or alterations to ordinary watercourses would require consent from the LLFA.	The siting and sizing of 'dry culverts during the preliminary design was based on LiDAR. A detailed topographic survey will be undertaken as part of the detailed design stage and the siting and sizing of 'dry culverts' would be re-evaluated at this stage. The pond at Lingwood Road, that would be infilled, is believed to receive water from highway runoff. The drainage is designed for the 100-year storm event with a 40% allowance for climate change. Infiltration testing, in accordance with BRE 365, has been undertaken throughout the DCO Boundary of the Proposed Scheme. Further infiltration testing will be undertaken, in areas where more information is required, as part of the supplementary GI to commence in Spring 2021. The impacts of climate change on groundwater flood risk is considered qualitatively.	Agreed	15.12.21

Issue	Document reference	Norfolk County Council Comment	Applicant's Response	Status	Date
		• The LLFA advised of the importance of reliable infiltration testing to inform the drainage design. • The assessment of climate change on groundwater features should take the form of a simple qualitative assessment. Currently EA projections suggest annual groundwater recharge would remain the same but with altered seasonal timing.	Further details will be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.		
Existing Flooding	Section 13.7 of Chapter 13 Road Drainage and the Water Environment of the ES	The FRA discusses the surface water flood history and notes the 'high impact' flooding incident of 2019 which closed the western bound carriageway in Blofield. As a 'high impact' local flood event, the LLFA would expect further comment regarding the cause, impacts and remedial works within the body of the report. At present there are only limited remarks in the conclusion. A plan with the approximate location and extent of this specific flood would be considered appropriate for inclusion (either as a separate plan or on an existing plan). As some of the existing drainage systems are proposed to remain in use and unchanged, it would be appropriate to confirm whether the area of the flood is served by highway drainage that is proposed to remain unaltered. If these two areas overlap, it would be appropriate for the FRA to discuss whether the existing drainage system has been reviewed to confirm its current design capacity is acceptable.	The LLFA's comment relates to the draft FRA which was provided to the LLFA for comment. The FRA (Section 5.2, Appendix 13.1 (TR010040/APP/6.2) to the ES (TR010040/APP/6.1)) and Section 13.7 of Chapter 13 Road Drainage and the Water Environment of the ES (TR010040/APP/6.1) detail previous flood events in the locality of the Proposed Scheme and any associated with the A47 drainage network with reasons where known. Flooding of the carriageway was associated with the existing drainage network and largely as a result of blocked gullies. In 2019 heavy rainfall caused complete closure of 200m of the westbound carriageway located more than 1km from the Proposed Scheme. A location map in the FRA shows only known highway drainage flooding within 1km of the DCO Boundary as per the defined study area. Existing carriageway flooding to the west and east of the Proposed Scheme is to be investigated by National Highways and, where appropriate, remedial works will be undertaken. Where the Proposed Scheme drainage replaces the existing drainage; this will be designed to current DMRB standards.	Agreed	18.10.21
Surface Water Flood Risk	The FRA (Appendix 13.1 (TR010040/APP/6.2) to the ES	The FRA does not report on the matter of surface water being redirected along existing flow paths as indicated in the DSR. The LLFA would seek confirmation that the redirected flow does not increase the on-site and off-site flood risk. The further information the LLFA would seek is to address this concerns is; • identification of the redirected flow path; • identification of the flow paths receiving the additional flow; • the anticipated additional amount of overland flow; and • the identification of off-site property likely to be impacted.	The LLFA's comment relates to the draft FRA which was provided to the LLFA for comment. The FRA (Appendix 13.1 (TR010040/APP/6.2) to the ES (TR01004/APP/6.1)) has now been updated to incorporate a detailed assessment in line with the LLFA's requirements.	Agreed	18.10.21
Pre-development runoff rates	Both the FRA (Appendix 13.1 (TR010040/APP/6.2)) and the DSR (Appendix 13.2 (TR010040/APP/6.2)) to the ES	There is currently no reporting or summary of the pre-development and post-development runoff rates and the associated attenuation volumes within the FRA.	The LLFA's comment relates to the draft FRA which was provided to the LLFA for comment. Both the FRA (Appendix 13.1 (TR010040/APP/6.2)) and the DSR (Appendix 13.2 (TR010040/APP/6.2)) to the ES (TR010040/APP/6.1)) have been revised to include details of the discharge or attenuation volumes to soakaway trenches and infiltration basin generated for the 1 in 10 year and 1 in 100-year storm event including climate change allowances. As infiltration based SuDS solutions are proposed, there is no requirement to attenuate to greenfield \ pre-development runoff rates. The infiltration rate determines the storage required and the soakaways are designed accordingly.	Agreed	18.10.21

Issue	Document reference	Norfolk County Council Comment	Applicant's Response	Status	Date
Climate Change	The FRA (Appendix 13.1) (TR010040/APP/6.2) and the DSR (Appendix 13.2) (TR010040/APP/6.2) to the ES	In relation to the drainage design, the FRA confirms that during consultation with the LLFA, it was requested that "Drainage mitigation should provide sufficient attenuation for a 1 in 100-year event including an allowance for future climate change" At present, some elements of the current drainage design do not meet these standards.	The LLFA's comment relates to both the draft FRA and draft DSR which were provided to the LLFA for comment. The FRA (Appendix 13.1) (TR010040/APP/6.2) and the DSR (Appendix 13.2) (TR010040/APP/6.2) to the ES (TR010040/APP/6.1) have been updated to clarify the design standards in the reports which remain unchanged throughout the design process. The highway drainage has been designed to attenuate up to a 1 in 100-year storm event including a 20% climate change allowance. Hydraulic modelling has confirmed that water levels within the soakaways do not exceed adjacent ground levels or the capacity of the infiltration basin for all events modelled, up to 1 in 100 year with 40% allowance for climate change. Existing surface water pathways for overland flows have been maintained or facilitated through interception using appropriately designed collection drains and cross-drains, also known as 'dry culverts'. 'Dry culverts' shall be designed to convey a 1-in-100-year flow including an additional 65% climate change allowance in order to maintain connectivity of surface water flooding pathways. Clean water soakaways shall be used to attenuate natural catchment runoff and have been designed to a 1 in 10-year storm event including a 20% climate change allowance. Hydraulic modelling of these soakaways has confirmed that they attenuate a significant proportion of the 1 in 100-year storm event including a 40% allowance for climate change. Therefore, due to this attenuation there is likely to be a reduction in downstream surface water flood risk compared to the existing situation. Where there is a risk that the Proposed Scheme will increase surface flood risk to itself or to a downstream flood risk receptor then the clean water soakaways are sized to attenuate a volume up to the 1 in 100-year event including an allowance for climate change.	Agreed	18.10.21
Climate Change	The DSR (Appendix 13.2	The LLFA had stated the requirement for the surface water drainage to attenuate the 1% AEP (1 in 100 year) plus climate change event. This is supported by the DMRB document CG 501 – Design of Highway Drainage Systems, National Planning Policy Framework (NPPF) and the SuDS National Technical Standards. However, at present the drainage design does not meet this standard. The drainage strategy has stated it would only design the highway drainage systems up to a 2% AEP (1 in 50 year) storm. There is no mention of designing for the 1% AEP (1 in 100-year) plus climate change storm, rather than the 1% AEP storm with climate change allowance would be used to assess the risk. The infiltration basin and the soakaways are stated as being design to a 10% AEP (1 in 10 year) storm with 20% climate change. The DSR states that a "check for flooding in a 1 in 100-year storm with 40% allowance for climate change" would be performed rather than designing for the 1% AEP storm with climate change. The LLFA have been clear in previous correspondence (which are appended to the DSR) and in their policy guidance document (Norfolk LLFA Statutory Consultee Guidance Document) that they will seek the nationally accepted standard that restricts the surface water runoff from a greenfield site to the greenfield runoff. In addition, the correspondence	The LLFA's comment relates to the draft DSR which was provided to the LLFA for comment. The DSR (Appendix 13.2 (TR010040/APP/6.2) to the ES (TR010040/APP/6.1)) has been updated to clarify the design standards for the Proposed Scheme which have remained unchanged. The highway drainage has been designed to attenuate up to a 1 in 100-year storm event including a 20% climate change allowance. Hydraulic modelling has confirmed that water levels within the soakaways do not exceed adjacent ground levels or the capacity of the infiltration basin for all events modelled, up to 1 in 100 year with 40% allowance for climate change. Existing surface water pathways for overland flows have been maintained or facilitated through interception using appropriately designed collection drains and cross-drains, also known as 'dry culverts'. 'Dry culverts' shall be designed to convey a 1-in-100-year flow including an additional 65% climate change allowance in order to maintain connectivity of surface water flooding pathways. Clean water soakaways shall be used to attenuate natural catchment runoff where the natural catchment runoff needs to be diffused at the downstream side of the road due to the collection system on the upstream side and the pipe crossing locally channelling natural catchment flows across the Proposed Scheme. The clean water soakaways will serve to dissipate any increase in velocity in these flows on the downstream side of the road. They have been designed to a 1 in 10-year storm event	Agreed	18.10.21

Issue	Document reference	Norfolk County Council Comment	Applicant's Response	Status	Date
		appended to the DSR clear states "Any drainage mitigation for the should attenuate the post development runoff rate and volume to the equivalent pre development greenfield rate and volume up to the 1 in 100 plus climate change allowance."	including a 20% climate change allowance. Hydraulic modelling of these soakaways has confirmed that they attenuate a significant proportion of the 1 in 100-year storm event including a 40% allowance for climate change. Therefore, due to this attenuation there is likely to be a reduction in downstream surface water flood risk compared to the existing situation where surface water flows from the natural catchment flow freely overground. Where there is a risk that the Proposed Scheme will increase surface flood risk to itself or to a downstream flood risk receptor then the clean water soakaways are sized to attenuate a volume up to the 1 in 100-year event including an allowance for climate change. Subsequently, the FRA (Appendix 13.2 (TR01004/APP/6.2) to the ES (TR010040/APP/6.1) has been revised with an updated summary.		
Various matters - Consultation Response on draft DSR (P01)	Chapter 13 Road Drainage and the Water Environment) (TR010040/APP/6.2)).	Response received on DSR (P01) by the NCC on 6 August 2020: CG501 is quoted and confirmation is requested for compliance with the design for the 1% AEP plus climate change for highway drainage systems and attenuation of surface water runoff. Half drain times for infiltration features to be provided on drawings. An appropriate distance to be provided between infiltration features and from properties. Clarification to be provided on the siting of these features. Design information to be provided for the driveable swales to demonstrate safety for use, the maximum depth of water conveyed and an environment assessment. Clarity to be provided on if vortex interceptors and dedicated spillage containment tanks to be included in the drainage design. Clarity to be provided on how footpaths present constraints to the drainage design. LLFA are interested in whether an assessment on water quality for increased traffic had been undertaken for existing drainage areas. The LLFA have requested that the interaction between surface water flow paths, any redirected flow paths and road drainage is marked up on the drawings in the DSR and identification of any impacts. The LLFA also requested the following: • Clarity required on whether a consultation was held with off-site property owners. • Clarity on any required remedial works for existing drainage systems. • The LLFA requested the timeline for any further infiltration testing and that this be carried out in accordance with BRE Digest 365. • Clarifications required on the future responsibility for drainage design elements. • Information required on construction phase drainage works and temporary measures.	National Highways agreed to revise the DSR in light of the LLFA's response. The response to the LLFA's comments were provided to the LLFA and discussed in a meeting on 24 September 2020 before the DSR was updated. It was confirmed that the highway drainage and attenuation was designed for 1% AEP plus climate change. Half drain times were provided on tables on the drawings in the updated DSR. Clarification provided on the siting of soakaway features - aimed at keeping as flat as possible in the topography to maximise storage. Soakaway features separated by 10 m in the revised DSR drawings and a note added re further micro siting to establish appropriate separation distances at detailed design stage. Further information on driveable swales was included in the DSR, issued to NCC on 03.12.2020. It was confirmed that vortex interceptors and dedicated spillage containment would not be included in the design and the appropriate spillage assessment has been undertaken. It was confirmed that where footpaths were included in the design, the road run-off would have to be drained into kerb and gulley systems instead of filter drains. The traffic assessment on existing sections of road which would retain existing drainage outfalls concluded that there would be less traffic on these roads (which will become local access roads) compared to the existing A47. The drawings now show the surface water paths and the interceptor ditches and cross-drains where these collect overland flow and it can be seen that there is no significant redirection of flows as these are conveyed across the new carriageway. Incidences for existing / historic flooding were requested from the local authorities and specific responses regarding localised flooding to landowners were obtained during public consultation. Clarity was provided on remedial works. National Highways are investigating the known flooding hotspots on the existing A47 to the east and west of the Proposed Scheme, including the October 2019 flooding event, and will review options to remediate the risk of flooding to the existing A47 carriageway. However, these works will be undertaken separately from the Proposed Scheme.	Agreed	18.10.21

Issue	Document reference	Norfolk County Council Comment	Applicant's Response	Status	Date
			The timeline given for further infiltration testing was Q1 2021 and this is ongoing currently. Information was provided in the DSR on future responsibility for drainage elements in so far as the scope of the DSR allowed. HE and the NCC to finalise agreements on this. Advice on construction phasing will be included at detailed design when a phasing plan will be made available from the Contractor. Temporary measures have been included in Chapter 13 of the ES.		
Attenuation of embankment drainage	Chapter 13 Road Drainage and the Water Environment) (TR010040/APP/6.2)).	The NCC requested embankment runoff should be attenuated. This had been discussed at the meeting of 24.09.2020. Following subsequent correspondence NCC responded on 30.10.20 to state "On this occasion due to the advanced stage of the design, the impending DCO submission and the limited amount of embankment surface water runoff, the LLFA will not pursue the inclusion of surface water toe drains at the base of the embankments within the Proposed Scheme. However, the LLFA does reiterate our stance and expectation that in the future, all developments (including road improvement schemes) will need to manage the surface water runoff from geotechnical structures. These structures have altered the existing ground conditions through their construction process (such as compaction) and their geometry (such as slopes gradients and the local topography). Therefore, they are not able to drain in the same manner as before the land was developed. "	The DMRB CG501 Rev 2, paragraph 2.1, 4) requires management of embankment runoff only and not attenuation. To confirm, the drainage design includes toes drains at the base of embankments. To satisfy the request from NCC, the design was examined retrospectively. The Proposed Scheme does not have very large embankments, being overall quite a flat scheme. It was agreed that to retrospectively build in the attenuation of short sections of embankment in this late stage of the development of the design would be onerous and impact on the outfall levels for the road drainage. The larger embankments are proximate to the infiltration basin and as such will drain directly to the basin where they will be attenuated to a 1 in 100-year event with a 40% allowance for climate change. This had already been considered in the design and is shown as part of the relevant drainage catchment in the drainage drawings in Annex B of the updated DSR (P02).	Agreed	18.10.21
Outstanding queries on revised FRA and revised DSR	N/A	The LLFA acknowledged that many of the recommendations and requirements in their previous pre-application responses were taken on board. Further queries raised in letter dated 22/12/20.	FRA and the DSR have been updated as per discussions and submitted to consultees.	Agreed	18.10.21
Details of construction phase surface water management approach and any temporary measures that would be in place.	N/A	Further information requested for the DSR and FRA.	FRA and the DSR have been updated as per discussions and submitted to consultees.	Agreed	18.10.21
Infiltration Basin drain down times	Chapter 13 Road Drainage and the Water Environment) (TR010040/APP/6.2)).	LLFA queried the half drain down time of 40 hours for the infiltration basin which is greater than the CD 530 requirement of 24 hours. The freeboard or other justification was requested.	The infiltration basin is required to empty in 72 hours in accordance with CD 532 and there is a freeboard of 1.3m above the 1 in 100 year + 40% Climate Change water level.	Agreed	15.12.21

3.3 SoCG: Relevant Representation response of 31/03/2021

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
General (RR-002-2)		However, whilst the proposals include a grade-separated junction at the B1140, which is welcomed due to the casualty record at this junction and its role in serving HGV movements to Cantley, the proposals include only a limited-movement junction at Blofield. Norfolk County Council's principal concern with the scheme relates to the lack of provision proposed for non-motorised users wishing to cross the A47 in the middle of the proposal, in the vicinity of North Burlingham. The A47 has historically been a barrier to connectivity between the two settlements of Burlingham and Lingwood, in an area where permissive paths and the Public Rights of Way network are all popular. The county council has consistently pressed the applicant, Highways England, to provide a connection and considers that a suitable facility, in the form of an overbridge, should form part of the scheme proposals. More detail is provided later in our representation. The principle of dualling the A47 is fully supported. This has been a longstanding objective of the county council. The county council leads the A47 Alliance, which has been campaigning for full dualling of the A47 from Lowestoft to the A1 at Peterborough with appropriate grade-separation. The current proposals largely meet this aspiration, providing a dual-carriageway standard A47.	The Applicant notes the support in principle for the Scheme from Norfolk County Council and the recognition the Scheme forms part of a wider group of projects providing a dual carriageway standard A47. The Scheme Design Report (**TR010040/APP/7.6 Rev 1**) sets out the justification for the junction at Yarmouth Road and details the options considered. An all-movements junction was discounted due to the low use of the existing junction arrangement in the forecast future years do-minimum scenario with the strategic traffic model. The Applicant considers that the overall package of Walking, Cycling and Horse-Riding is appropriate and the two overbridges crossing the realigned A47 provide appropriate crossings to meet the needs of such users. The Applicant has undertaken a survey and an analysis of the results, which supports the Applicant's conclusion, is set out in Appendix A to this document.	Under discussion	
De-trunking (RR-002-3)		No agreement has been made to accept any current Highways England assets and we will not do so until an agreement process including exchange of data and provision of funding regarding assets which may require attention in the short to medium term has been completed. The agreement should be based on the condition and number of the assets to generate either a sum of funding to be transferred to Norfolk County Council, or the asset brought up to an as new or good condition. The county council would expect to receive a commuted sum, agreed with Highways England, for future maintenance of transferred assets.	The Applicant will work with Norfolk County Council to settle and conclude a detrunking agreement for the areas of highway that will no longer form part of the strategic road network, as well as new highway areas that would become the responsibility of the local highway authority.	Under discussion	
De-trunking (RR-002-4)		The county council is in agreement that the B1140 remains as a B class road, with the majority of other roads classed as C roads. We would, however, suggest two of the small cul de sac sections being U class rather than C class roads; these are located south of the new A47 where they realign for the over bridge and the access to the lagoon near Blofield. In reference to the lagoon near Blofield, this will be the responsibility of Highways England. We have suggested the need to engage with Norfolk County Farms as the farms track is on their land, indicating a private farm track with a PROW for pedestrians could be a viable route forward. For slopes and verges, clear indication is required, with demarcation possibly necessary, to confirm ownership for ongoing maintenance requirements. Clear numbering / labelling of signs posts for instance at a junction would be beneficial to help facilitate who is responsible for assets in the future. Trees will be retained near the cycle path; clarity is needed whether it is proposed that these will be NCC, Highways England or private owner boundary trees.	The Applicant confirms that the "Access Road" and "B1140 White House Lane" as denoted on the Classification of Roads Plans (**APP-015**) are proposed to be unclassified roads. The Applicant confirms that the "Infiltration Basin" will be the responsibility of National Highways. The Applicant has been engaging with Norfolk County Farms (NCF) in relation to the "Agricultural Access Track" and has agreed some minor modifications, as shown on updated the General Arrangement Plans (**TR010040/APP/2.6 Rev 1**), and that NCF will retain responsibility for the track. The responsibility of the PRoW is still in discussion. The Applicant is continuing to engage with Norfolk County Council in respect of assets to be adopted and will continue to do so until agreed by both parties.	Under discussion	

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Highways Impacts (RR-002-5)		The Transport Assessment sets out projected changes to traffic patterns and therefore the likely impacts on local roads and communities. Based on this assessment, we are satisfied that the extent of the impacts does not warrant further mitigation beyond that which is being proposed.	The Applicant acknowledges NCC comments with respect to traffic impacts and mitigation.	Agreed – this is a statement and therefore no action required.	02.11.21
Highways Impacts – Cucumber Lane (RR-002-5)		At the A47 / Cucumber Lane junction at Brundall, Highways England have discussed taking forward a separate proposal, at a later date yet to be confirmed, encompassing traffic signals at this roundabout in order to accommodate peak-time traffic flows. We do not consider that this provides sufficient commitment to mitigation that has been identified as being needed. In addition, the county council does not support the solution that has been mooted by Highways England (signalisation of the roundabout junction) as it will lead to delays on the trunk and local road network throughout the day. We would like to have assurance that an appropriate solution can be identified and agreed; about the timing of its delivery; and commitment to its funding. We consider that Highways England should commit to monitoring to ascertain whether, and at what point in time, a scheme at this junction is required.	As stated in the Transport Assessment section 9.6.5 (**TR010040/APP/7.7 Rev 1**) the Applicant envisages that any potential congestion relief schemes taken forward will need to be progressed independently.	Under discussion	
Highways Impacts (RR-002-6)		The county council would also expect there to be minimum disruption on the local highway network during the A47 dualling construction period and would want to work with Highways England, or its contractors, on managing traffic during the works.	As the majority of the construction activities are offline the Applicant anticipates minimal disruption to the local highway network. Norfolk County Council will be kept informed as to any planned traffic management that may impact on their network such as a full road closure of the A47, which would be necessary to construct the final tie ins at each end of the scheme.	Under discussion	
Socio Economic Issues (RR-002-7)		The county council would certainly want to see opportunities for inclusive growth and social mobility included in the socio-economic opportunities for Norfolk. We would be willing to work with Highways England or the appropriate agency to support this The county council will continue to work proactively with Highways England to encourage apprenticeships, work experience and internships being included at an appropriate stage in the project. Productivity and other wider economic benefits will arise from the completed schemes. These include journey time savings and reliability improvements, benefitting businesses. These are to be welcomed.	The Applicant agrees with NCC regarding productivity and wider economic benefits arising from the scheme and is grateful to NCC for welcoming these positive benefits The Applicant and Galliford Try, as the Principal Contractor, will explore opportunities to encourage direct and indirect local employment, proportionate to the scale and timescale of the project.	Agreed	08.12.21
Air Quality (RR-002-8)		The county council supports improvements to air quality and would want to see continued monitoring including in operation of the scheme following construction.	The Applicant will continue to discuss this with NCC.	Under discussion	
Archaeology (RR-002-9)		A significant amount of archaeological investigations has already been undertaken in association with the scheme. Geophysical surveys and archaeological trial trenching have been carried out within almost all of the 'redline' area of the proposed scheme. Following a review of reports on the geophysical survey and trial trenching the county council agreed an outline scope for post-consent archaeological mitigation with Highways England's archaeological consultant at the end of November last year. We welcome any opportunities for enhancement of cultural heritage in the North Burlingham area as set out on page six of the Environmental Statement: Non-Technical Summary	The Applicant notes the Norfolk County Council's acknowledgement of the surveys undertaken. Enhancement measures proposed relating to cultural heritage as a result of the assessment are reported in the ES Chapter 6: Cultural Heritage (**APP-044**). Enhancement measures to be carried forward by the Principal Contractor are included in the Environmental Management Plan (EMP (**TR010040/APP/7.7 Rev 2**), including CH1, 2, 3 and 8 in Table 3-1: Record of Environmental Actions and Commitments.	Agreed – this is noted.	06.12.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Arboriculture (RR-002-9)		At the time of writing, this topic is included within one of the documents that is inaccessible and marked 'confidential' and the response has been prepared in the absence of sight of this report. It is expected that all trees that require removal due to the impact of the scheme have been identified in this document and appropriate tree protection plans and method statements produced to safeguard trees that are suitable for retention. Considerations to elements such as lighting, sight lines (to junctions, signage and cameras etc), under and over ground utility installation, construction compounds and drainage will be appropriately considered at this stage. It is expected that this document will highlight how the scheme has identified and retained high quality trees where appropriate and that all of the arboricultural impacts feed into the landscaping scheme to clearly demonstrate net gain is achieved. The arboricultural assessments and recommendations outlined above should be in accordance with British Standard 5837 2012: Trees in relation to design, demolition and construction.	Trees identified for removal have been identified and are presented in ES Appendix 7.7 Arboricultural Impact Assessment (previously **APP-084**) (resubmitted at Deadline 1 (**TR010040/APP/6.2 Rev 1**)). This includes root protection areas and retention buffers to safeguard trees from the proposed works. The existing vegetation to be retained is also presented in the Masterplan (**TR010040/APP/6.8 Rev 1**). The Environmental Management Plan (**TR010040/APP/7.7 Rev1**) includes the requirement to retain trees (L2 within the REAC). Trees identified by BS5837 are shown in the Arboricultural Impact Assessment Plan presented in the ES Appendix 7.7 Arboricultural Impact Assessment (previously **APP-084**) (resubmitted at Deadline 1 (**TR010040/APP/6.2 Rev 1**). A complete BS5837 arboricultural assessment is proposed prior to construction.	Under discussion	
Landscape (RR-002-10)		From the information that is currently available, overall, the methodology is sound and uses appropriate guidance to inform the process. The identification of receptors and their sensitivities appears appropriate. Paragraph 7.9.7 (of Chapter 7 of the Environmental Statement: Landscape and Visual Effects) details the proposed mitigation during construction, this appears appropriate, although officers have been unable to identify any mapping where bunds and storage mounds are shown. Paragraph 7.9.8 details mitigation during operation, and this is additionally shown on TR010040/APP/6.8. It would be beneficial to have further details of the proposed planting included, such as species mix, seed mix etc... Paragraph 7.10.4 onwards details vegetation removal, but more detail is assumed to be in the arboriculture survey, which is currently unavailable. The council would want to see this demonstrated graphically so that the overall impacts can be seen. The effects on receptors during construction appears to have been considered sufficiently, and the identification that for many of these the effects will be moderately and largely adverse is noted. We also broadly agree with the conclusions drawn regarding effects during operation, the effects would be much more adverse immediately following completion, and for some time afterwards, but would decrease to negligible when planting matures (demonstrated from a fifteen-year perspective.	The Applicant notes Norfolk County Council's acknowledgement of methodology of the assessment. The location of bunds and storage mounds will be considered at the detailed design stage. Environmental considerations and monitoring requirements for storage of material during construction is included in the first iteration of the EMP (**TR010040/APP/7.7 Rev 1**) as part of the REAC, including G6, G11, CH4, GS1 and M1. An indicative species list is included as part of the Masterplan (**APP-118**). Specific heights/species are included as a requirement where necessary for mitigation identified in the Environmental Statement. This is noted in the REAC of the EMP (**TR010040/APP/7.7 Rev 1**). ES Appendix 7.7 Arboricultural Impact Assessment ((previously **APP-084**) submitted as part of the Environmental Statement has been resubmitted at Deadline 1 (**TR010040/APP/6.2 Rev 1**). The Applicant notes Norfolk County Council's acknowledgement of conclusions of the assessment for operational effects.	Agreed	06.12.21
Landscape (RR-002-10)		The impacts of lighting both from introduced lighting, and those of elevated headlights are concerning, and would largely still be noticeable for many years into the operation of the road. The impact on overall light pollution and an increase in the lighting of the sky should also be considered. Whilst not a particularly noted area of dark sky, this scheme has the potential to increase the overall areas light pollution considerably.	Through ensuring lighting design complies with British Standards and Institution of Lighting Professional's GN01:2021 guidance, obtrusive light with the potential to affect Dark Skies and other sensitive features, such as ecologically sensitive receptors will be limited in accordance with Environmental Zone criteria. The purpose of Environmental Zone criteria is to ensure the potential for obtrusive light (light pollution) to occur is restricted, through placing maximum limits on light spill, upward light and glare. Additionally, DMRB places limits on the maximum permitted light source intensity at critical angles from the luminaire, the purpose of this is to further reduce the potential for adverse levels of upward light from the luminaires to contribute towards sky glow.	Agreed	29.10.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Landscape (RR-002-10)		There is potential for development of the Community Woodland as part of the wider landscaping scheme to not only offer benefits to the landscape from a biodiversity perspective, but also from a health and wellbeing perspective offering local access to green space where the shortened route to Burlingham Woods has been severed.	The Applicant has recently secured additional funding to review potential biodiversity opportunities around the scheme. The Applicant will work with NCC to develop a feasibility study to assess the biodiversity opportunities of the Lingwood Community Woodlands (LCW).	Agreed	29.10.21
Biodiversity (RR-002-11)		As stated in the council's previous response to the Section 42 consultation (September 2018), we would wish to see the original reports before we are able to say if we agree or disagree with the assessments made. At this stage, we broadly agree with the scope of the ecology work but we are not able to make comment on the appropriateness of the survey data, or the assessments of impacts. There are some key concerns regarding the limitations of some of the protected species surveys, and the intention to 'complete surveys prior to construction.' The Environmental Statement Non-Technical Summary states that "It was not possible to complete surveys due to COVID-19 restrictions during the survey window. These will be completed prior to construction." The extant government circular on planning and biodiversity (Circular 06/2005) makes it explicit that "the presence or absence of protected species, and the extent to which they could be affected by a proposed development, should be established before planning permission is granted, since otherwise all material considerations might not have been considered in making the decision." Paragraph 116 of the same circular also states: "When dealing with cases where a European Protected Species may be affected, a planning authority has a statutory duty under Regulation 3(4) to have regard to the requirements of the Habitats Directive in the exercises of its functions. Further the Directive's provisions are clearly relevant in reaching planning decisions, and these should be made in a manner which takes them fully into account …".	Biodiversity chapter and associated appendices have been submitted as part of the Environmental Statement and are available on the PINS website for review. The ES Chapter 8: Biodiversity (previously **APP-046,** resubmitted at Deadline 1 **TR010040/APP/6.1 Rev 1**) is supported by the following appendices: • Appendix 8.1: Legislation and policy framework (**APP-086**) • Appendix 8.2: DMRB biodiversity evaluation assessment methodology (**APP-087**) • Appendix 8.3: 2018 Bat survey report (**APP-088**) • Appendix 8.4: 2018 Breeding bird survey report (**APP-089**) • Appendix 8.5: Wintering bird survey report (**APP-090**) • Appendix 8.6: Confidential Badger survey report (**APP-091**) • Appendix 8.7: Terrestrial invertebrate report (**APP-092**) • Appendix 8.8: Great crested newt survey report (**APP-093**) • Appendix 8.9: Reptile survey report (**APP-094**) • Appendix 8.10: 2020 Bat survey report (**APP-095**) • Appendix 8.11: Bat Activity crossing point survey report (**APP-096**) • Appendix 8.12: 2020 Breeding bird and barn owl survey report (**APP-097**) • Appendix 8.13: Botanical survey report (**APP-098**) Large scale ecology surveys of this type frequently encounter obstacles (access restrictions, weather, technical failures among others) that mean they have limitations, and the COVID-19 pandemic enhanced these restrictions. However, the long duration of these projects allows for significant re-survey to occur and is in fact required for European Protected Species licensing to ensure that the data submitted for licensing is as up to date as possible. The level of survey data collected, while acknowledging limitations, is sufficient to assess the potential impacts on the ecological receptors including European protected species. Further ecology surveys and the presence of an Ecological Clerk of Works on site are included, where relevant, in the REAC of the EMP (**TR010040/APP/7.7 Rev 2**) and will be required prior to construction.	Agreed	08.11.21
Bats (RR-002-12)		We have recently downloaded the bats information from the PINS website which was previously marked confidential and will review this and provide comments regarding the level of assessment that has taken place for bats, in particular for barbastelle bats. The risk to bats is significant due to the presence of barbastelle bats, which are protected under the Conservation of Habitats and Species Regulations 2017 and nationally important. The Bat Conservation Trust (BCT) www.bats.org.uk, has evidenced the Core Sustenance Zone (CSZ) for barbastelle bats to be 6km in radius. However, from the information seen in the Environmental Statement, barbastelle bats have only been considered at a 2km radius,	The Zone of Influence (ZoI) relates to the predicted impact zone of the scheme for the proposed works. This was set according to the standards set out in DMRB LA108 and CIEEM EcIA guidance (CIEEM 2018). The project may overlap with the Core Sustenance Zone (CSZ) of bat roosts (both known and unknown) and potential impacts on these are assessed through the impact assessment process including impacts on foraging and commuting habitat (this assessment included extensive bat activity and crossing point surveys). This information determines the level	Agreed	08.11.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
		based on results of the Norfolk Biodiversity Information Service Data Search and subsequent surveys. No reference to CSZs was found in the relevant sections; Chapter 8 Biodiversity or Chapter 6.4 Environmental Statement Non Technical Summary. A (CSZ) refers to the area surrounding a communal bat roost within which habitat availability and quality will have a significant influence on the resilience and conservation status of the colony using the roost. The scheme might not therefore provide adequate assessment on the level of bat use in the area. Other issues such as Lighting Schemes, mitigation for reptiles, amphibians, mammals, birds will be commented on once the relevant reports are available	of potential impact on bats (of all species) that have been recorded as present on site and in the surrounding habitat (regardless of known CSZ's of individual roosts). The risk to bats is acknowledged within the ES Chapter 8: Biodiversity (previously APP-046, resubmitted at Deadline 1 TR010040/APP/6.1 Rev 1) resulting in the Moderate adverse residual impact assigned to bats. The level of assessment is considered adequate for the purpose of the EIA process.		
Lingwood Community Woodland (RR-002-13)		Lingwood Community Woodland is on land owned by Norfolk County Council / County Farm Estate. It would be expected that the Norfolk County Council Environmental Policy 2019 be considered. Four key aims of the Environmental Policy are: • Recovering nature and enhancing the beauty of landscapes • Connecting people with the environment to improve health and wellbeing • Using and managing land sustainably • Increasing resource efficiency and reducing pollution and waste. Detail of the planting plan could not be found. We would expect to see a design for the layout and species mix of the replacement and additional woodland planting. The replacement and additional woodland should consider the need for rides (linear trackways designed for access) for walking and access for management and open glades	ES Chapter 7 Landscape and Visual (**APP-045**) presents the findings of the Landscape and Visual Impact Assessment (LVIA) including baseline conditions, the potential impacts of the Scheme upon surrounding landscape and visual receptors and identification of appropriate mitigation. The overarching mitigation principles embedded in the Proposed Scheme design (which address strategic and policy derived objectives and location specific screening and integration functions) include: · • Protection and enhancement of the landscape character and sense of place by: o retaining the pervading sense of openness where this is consistent with a balanced preference for visual screening o integrating Proposed Scheme infrastructure (notably elevated overbridges) through appropriate use of planting to contribute to visual screening o reinforcing existing plantation character with woodland planting where this is consistent with the surroundings o reinforcing existing field boundaries with individual trees and hedgerows where the field pattern is a notable component of the landscape o including for translocation and reinstatement of important hedgerows o providing an appropriate Blofield 'gateway' semi-ornamental landscape treatment at the A47 junction with Yarmouth Road o retaining or replacing and reinforcing existing vegetation where this contributes to the distinctive qualities of the landscape, including a notable line of poplar trees on the north-eastern edge of Blofield o selecting plant and grass species appropriate to the locality to maintain consistency with the appearance of the area · • Protection of views of 'community importance' associated with the eastern landscape setting of Blofield. This would be achieved through a range of proposed landscape treatments including woodland, hedgerows and individual trees to integrate the Proposed Scheme without detriment to the general visual outlook. A layout of existing/replacement planting (including woodland) is presented in the Masterplan (**TR010040/APP/6.8 Rev 1**). An indicative species list is also included as part of the Masterplan. Specific heights/species are included as a requirement where necessary for mitigation identified in the Environmental Statement. This is noted in the REAC of the EMP (**TR010040/APP/7.7 Rev 2**). A Walking, Cycling, Horse-riding Assessment and Review (WCHR) process has been undertaken as part of the Scheme and is summarised in ES Chapter 12 Population and Human Health (**APP-050**). The scheme	Agreed	06.12.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
			creates new footpaths and cycleways, improving public access to the countryside The area within the Order Limits is the land required to construct and operate the Scheme. Land required temporarily for construction will be returned to its former use and measures are included within the REAC to protect agricultural soils (**TR010040/APP/7.7 Rev 2**). The Scheme aims to avoid the creation of waste followed by, recycling, recovery and disposal to landfill as per the internationally recognised waste hierarchy, (see ES Appendix 10.3 Outline SWMP (previously **APP-102,** resubmitted at Deadline 1 **TR010040/APP/6.2 Rev 1)**). The EMP (**TR010040/APP/7.7 Rev 2**) describes the environmental mitigation measures that would be implemented during construction including measures to minimise waste: • re-using waste generated on-site • use of site-won or recycled material assets • use of material logistics planning to manage responsible local resourcing of material assets minimal ordering of materials, appropriate segregation and storage-site by waste type, to The Applicant has recently secured additional funding to review potential biodiversity opportunities around the scheme. The Applicant will work with NCC to develop a feasibility study to assess the biodiversity opportunities of the Lingwood Community Woodlands (LCW).		
Geology and Soils (RR-002-14)		No comments in respect of this particular topic in the submission.	The Applicant acknowledges this response.	Agreed – this is a statement and therefore no action required.	02.11.21
Material Assets & Waste (RR-002-15)		The Mineral Planning Authority (MPA) welcomes the inclusion of a Mineral Impact Assessment as part of the proposed scheme. The MPA agrees with the summary of mineral resources within the scheme and the constraints which are outlined in paragraph 10.4.6 (of the Mineral Impact Assessment). The MPA also agrees with the assessment of reuse suitability of site-won materials as outlined paragraphs 10.6.5-10.6.7. The MPA notes that an estimate of 22,400m3 of site won material is likely to be extracted during the construction phase, in paragraph 10.6.8. The MPA recognises that this an estimate and that a full assessment of the reuse potential of material will be required as it is excavated. Paragraph 10.6.9 states that the scheme has a significant earthworks material deficit, and therefore any opportunity to reuse the excavated material will be taken. In conclusion, the MPA considers that the Mineral Impact Assessment appropriately assesses the safeguarded mineral resources for the proposed scheme and contains an appropriate strategy for identifying suitable material for reuse in the construction phases of the scheme. Norfolk County Council, in its capacity as the Mineral Planning Authority, considers that if the scheme is required to follow the strategy outlined in the Mineral Impact Assessment this will effectively address mineral safeguarding issues relating to resource sterilisation	The Applicant is grateful to Norfolk County Council for its indication that mineral safeguarding has been addressed The Environmental Statement includes Appendix 10.4: Minerals Impact Assessment (**APP-103**). The EMP (**AS-009**) includes Annex B.3 Materials Management Plan (MMP).	Agreed – this is a statement and therefore no action required.	02.11.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
Noise and Vibration (RR-002-16)		The county council would expect disruption to be kept to a minimum during the A47 dualling construction period and would want to work with Highways England, or its contractors, on managing traffic during the works.	The Applicant acknowledges the points raised by Norfolk County Council and will continue to work with Norfolk County Council throughout the construction period. The EMP (**TR010040/APP/7.7 Rev 2**) includes Annex B.5 Construction Noise and Dust Management Plan, and Annex B.6 Construction Communication Strategy.	Under discussion	
Population and Human Health (RR-002-17)		• Additional and new non-motorised travel, commuting and longer-distance recreation choices have been created with the cycle lane along the northern side and a footpath along the southern side of the new highway Local, on-the-doorstep, short distance welfare recreation choices, however, will be further limited by the current alignment: o Burlingham Footpath 3 (FP3) is to be severed and no crossing point provided: o North/south non-motorised user (NMU) movement is already restricted by the A47, but the dual carriageway will be a complete barrier (there is no crossing provision) o The proposal doesn't discourage use of cars to access local points of interest and recreation • The concerns the county council raised previously, in discussion with Highways England and the Section 42 consultation, have not been addressed. • Whilst NMUs will be able to travel north-south via the new cycle and footpaths, at the road junctions either end of the scheme, this is a significant east-west increase in distance alongside a busy dual carriageway and so only suited to some recreation (eg running/cycling) choices while limiting others (dog-walking, welfare walking/cycling) • Linkages between the Parishes of Lingwood and Burlingham would effectively be severed. To address these concerns, the council feels that it is imperative that in addition to all the NMU provision proposed: • A bridge should be installed on the alignment of FP3 to enable NMU north south movement across the A47 keeping local connectivity and continuity. This should be a green bridge to add to the ecological mitigation measures necessary for this scheme and further enhance tangible well-being measures • The new footpath proposed along the southern boundary of the new highway should be of a higher status than footpath, ie a multi-user path so that it links with the proposals for the north side provision, again enabling NMU connectivity and continuity and so further widening choice and opportunity. It seems at odds to segregate and limit usage when the infrastructure is already going in • All new cycle and footpath provision must tie in with footways and safe crossing points at all junctions to ensure NMU traffic does not meet 'dead ends' or have to utilise the highway at busy junctions or slip roads. As set out in the Walking, Cycling and Horse riding Review, Highways England is suggesting that the cost of this provision could be met locally from CIL. However, as the crossing is considered to be directly related to the dual carriageway scheme, the council would expect Highways England to deliver it. There is an agreed, clear and concise process within Greater Norwich for CIL allocation and this would need to be followed should CIL be sought for this scheme. However, Greater Norwich has receipted circa £26m CIL in total since 2014, most of which is already	The Applicant considers that the overall package of Walking, Cycling and Horse-Riding is appropriate and the two overbridges crossing the realigned A47 provide appropriate crossings to meet the needs of such users. The Applicant has undertaken a survey and an analysis of the results, which supports the Applicant's conclusion, is set out in Appendix A to this document. The Scheme includes the provision of the North Burlingham Junction, which incorporates pedestrian and cyclist facilities to facilitate safe north south movements across the A47 thereby reducing the severance effect. The Applicant considers that the North Burlingham Junction is located in the right place to both provide for connectivity and remove a difficult existing junction. Although Burlingham FP3 will be diverted, a new public footpath running east west and to the south of the new A47 alignment will provide onward connections to pedestrian and cyclist facilities provided at both the Blofield Overbridge and the North Burlingham Junction. These facilities will provide for the safe north south crossing movements across the A47 thereby reducing the severance effect. The Applicant's assessment indicates that Burlingham FP3 is used primarily for recreational walking trips and is not a practical route for utility walking trips due to the quality of the footpath and the walking distances between North Burlingham and local facilities and amenities in Lingwood. The additional walking distances required to access the crossing facilities at the North Burlingham Junction from Burlingham FP3 are unlikely to deter recreational trip makers. Local, on-the-doorstep, short distance welfare and recreation choices will be increased by the provision of the new public footpath running east west and to the south of the new A47 and the new shared footway / cycleway running between east west along the former A47. Linkages between the Parishes of Lingwood and Burlingham will not be severed due to the provision of the crossing facilities at the Blofield Overbridge and the North Burlingham Junction. The Applicant considers that the concerns raised as part of the Section 42 Consultation in connection with non-motorised users have been appropriately addressed. The Applicant considers that there is no requirement for an additional overbridge for NMU on the alignment of Burlingham FP3 due to the provision of the new public footpath and the pedestrian and cyclist facilities provided at the North Burlingham Junction. Burlingham FP3 is a public footpath so cannot be used legally by cyclists and equestrians. The proposed new footpath will have the same legal status of Burlingham FP3 and will ensure that users do not meet a 'dead	Under discussion	

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
		allocated, and the first £4m in each forthcoming year is already pre committed (£2m NDR and £2m education). It is very unlikely therefore that there would be sufficient CIL available to fund a bridge, and funding for it would need to compete with other projects including Long Stratton Bypass, East Norwich and projects in the North East Growth Triangle. As a point of detail, the GNIP reports infrastructure delivery, but there are no funding commitments within it. The five-year Infrastructure Investment Plan is where CIL commitments are made	end' where the footpath is diverted. All existing cycle trips between Lingwood and North Burlingham and between other destinations north and south of the A47 are required to make use of the local highways and cross the A47 at the existing at-grade junctions. Cyclists facilities will be incorporated at the North Burlingham Junction to facilitate the safe north south movements across the A47 and the new shared footway / cycleway along the northern frontage of the former A47 will facilitate east west cycle movements between Blofield and North Burlingham. As such, there is no requirement for the proposed new public footpath to be of higher status. The Council's comments with respect to use of CIL are noted.		
Population and Human Health (RR-002-18)		The A47 has historically been a barrier in public access separating the two settlements of Burlingham and Lingwood. Burlingham Woods, north of the A47, associated permissive paths and the Public Rights of Way network are all popular with pedestrians and dog walkers. The surveys conducted by Highways England (in advance of the Section 42 consultation and in recognition of the concerns of the county council) support this, with 90 users having walked along Burlingham FP1 one Sunday. Other days in the Highways England survey showed consistently high use. However, it was noted that very few users, and on most days no-one, would choose to cross the A47. Usage (according to the Highways England PEIR Report) of the Public Rights of Way network south of the A47 was recorded as low. Two close settlements having such a huge contrast in usage indicates that the A47 is likely to be acting as a substantial barrier to walkers. The A47 Dualling Scheme has the opportunity to change this and with the right improvements can significantly enhance the Rights of Way network in this area. Whilst a footway has been proposed along with access across both road junctions, which in theory provide north south connections, the proposal (comprising a footway running parallel to the road) is not considered to be perceived as safe and attractive for families and dog walkers. This scheme could offer significant benefit for users if, wherever possible, a multi-user path was provided set back from the road rather than alongside the road. Some screening could also be used to further enhance the route, this would be more attractive for families with pushchairs, cyclists and dog walkers who are all looking to access the woods to the north. The most important improvement Highways England have the opportunity to make is installing a footbridge across the A47 connecting Burlingham FP1 and FP3 (these footpaths run north-south at the eastern end of the settlement of Burlingham; on either side of the A47) and ultimately providing a safe off-road link connecting the parish of Burlingham but furthermore offering links to South Walsham in the north and Strumpshaw in the south. The alternative (to a new crossing of the A47 at Burlingham) is walking considerably further to gain access at the proposed road bridges (west and east of Burlingham, both some 1500m from FP1 and FP3). This route will not be considered safe or appealing to families, cyclists or dog walkers. In summary, a new bridge would provide a much-needed missing link in the network, will offer a safe route for all users, and ultimately connects rural paths bringing two communities together	Burlingham FP1 is a promoted circular walk and is one of the recommended starting points for the Burlingham Woodland Walks (as indicated in the map and guide), which commence at its southern end in the St Andrew and St Peter Church car park. The mobility access paths forming part of the network also commence at this location. The car park can only accommodate a small number of vehicles but on street parking for users is available on Main Road in North Burlingham. Mobility access and ample car parking therefore make this an attractive starting point. The other recommended starting points are the health centre / library car park in Acle and the Fairhaven Garden Trust car park in South Walsham, both of which lie to the north of the A47. Most of the Burlingham Woodland Walks network and the majority of the key features are located to the north of the A47 in an area comprising North Burlingham, Burlingham Green, Town Green, South Walsham and Acle. By contrast, very few key features are located to the south of the A47 in the area between North Burlingham and Lingwood. The fact that very few users of Burlingham FP1 chose to continue south across the A47 is therefore not entirely down to the severance effect of the A47. It may simply be that Burlingham FP3 and permissive routes to the south of the A47 are not seen as attractive enough for most visitors to the area. This reflected in the survey results. The Scheme includes the provision of the North Burlingham Junction, which incorporates pedestrian and cyclist facilities to facilitate safe north south movements across the A47 thereby reducing the severance effect. The Applicant considers that the North Burlingham Junction is located in the right place to both provide for connectivity and remove a difficult existing junction. The new shared footway / cycleway along the northern frontage of the former A47 will improve accessibility for pedestrians and cyclists between Blofield and North Burlingham and the proposed form of the infrastructure is proportionate to likely future user activity in the area. The volumes, HGV content and speeds on the former A47 will be much reduced as part of the Scheme making this new infrastructure attractive to users. As such, there is no requirement to provide an additional offline multi-user route. The Scheme includes the provision of the North Burlingham Junction, which incorporates pedestrian and cyclist facilities to facilitate safe north south movements across the A47 thereby reducing the severance effect. The Applicant considers that the North Burlingham Junction is located in the right place to both provide for connectivity and remove a difficult existing junction. The Applicant considers that there is no requirement for an additional overbridge to provide a connection between Burlingham FP1 and FP3 due to the lack of need for such a facility. Users of Burlingham FP1 do not choose to cross the A47 as Burlingham FP3 and permissive	Under discussion	

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
			routes to the south of the A47 are not seen as attractive enough for most visitors to the Burlingham Woodland Walks. The Applicant's assessment indicates that Burlingham FP3 is used primarily for recreational walking trips and is not a practical route for utility walking trips due to the quality of the footpath and the walking distances between North Burlingham and local facilities and amenities in Lingwood. The additional walking distances required to access the crossing facilities at the North Burlingham Junction from Burlingham FP3 are unlikely to deter recreational trip makers.		
Population and Human Health (RR-002-19)		Related to the above, previous funding bids were submitted to Highways England to create a Burlingham-Lingwood walking and cycling link. This aims to create a walking and cycling bridge across the A47 south of Burlingham Woods to provide connection between Lingwood, Lingwood Station and the Burlingham estate trails network to the south and Burlingham Woodlands and businesses to the north of the A47. Burlingham Woods forms part of Norfolk County Council's Trails network and provides important connections between local settlements and a number of amenity spaces in this part of Norfolk. The scale of planned housing growth in east Broadland has led to a new focus on enhancing and expanding the core of Burlingham Woods at the heart of the Burlingham estate, to provide new green open space, connections and facilities for the wider population. This connection could encourage greater use of Burlingham Woods, the woods and estate green space is considered key in relieving pressure on the most sensitive designated Broads sits in the vicinity. It would also encourage residents south of the A47 in Lingwood and surrounding areas to use the Burlingham Woods trail to the north. The proposal is complementary to a wider ongoing project by Norfolk County Council, Broadland District Council and the University of East Anglia to expand the area and offering at Burlingham Woods.	The Applicant considers that the Scheme provides reasonable new and improved infrastructure for pedestrians and cyclists which improves accessibility and is proportionate to likely future user activity in the area. In combination with the existing facilities, the proposed pedestrian and cycling infrastructure would provide improved and safe connections between Blofield and North Burlingham and between Lingwood and North Burlingham. In addition, the two grade separated crossing points proposed at the Blofield Overbridge and at the North Burlingham Junction address the existing severance issues by removing the A47 as a barrier to non-motorised users thereby mitigating the environmental and social impacts of the Scheme and correcting an historic problem.	Under discussion	
Road Drainage and the Water Environment (RR-002-20)		The Lead Local Flood Authority (LLFA) team has been in contact with Highways England's project design team providing initial reviews of the flood risk assessment and drainage strategy.The drainage strategy has been developed in accordance with the Design Manual for roads and Bridges (DMRB) guidance, as have those for the other A47 schemes in Norfolk. The design guidance provided by DMRB is derived from a variety of planning policies, regulations, legislation and directives applicable in England, some of which have been updated. DMRB LA113 in section 2.13 and section 4.3 in DMRB CG 501 state all schemes designs shall include the latest climate change allowances in accordance with relevant national legislation requirements. The climate change allowances applied within the proposed drainage strategy have been superseded. The most recent guidance was updated in July 2020, although the updating of the peak rainfall allowances occurred previously in December 2019. The LLFA considers that the presence of the road structures footprint would be expected to last into the 2080s epoch (2070 to 2115) within the climate change guidance. This means the DMRB CG 501 advice in relation to the application of climate change is no longer in line with the current DMRB guidance. This has been addressed in the other schemes although it has not been raised as a point until now on this scheme. The proposed drainage design should apply the latest climate change allowances and would lead to the application of a 40% allowance to the drainage design rather than the 20% currently reported. As the scheme has tested the drainage design with the 40% climate change allowance,	The Applicant can confirm that the detailed design of the drainage systems will be in accordance with DMRB CG 501 – Design of Highway Drainage Systems (as set out in ES Appendix 13.2 Drainage Strategy (**APP-110**). Section 5.3 confirms that an allowance for 40% climate change is required.	Agreed	18.10.21

Issue	Document Reference (if relevant)	Norfolk County Council Comment	Applicant's Response	Status	Date
		we are aware there is capacity available within the attenuation features for this allowance.			
Climate (RR-002-21)		Norfolk County Council adopted its Environmental Policy at the end of 2019. This included a commitment to move towards carbon neutrality across all sectors by 2030. Emissions from the trunk road network would be included within this. In order to help meet the commitment in its environmental polices the council would want Highways England to commit to undertaking work across the trunk road network to understand in more detail the carbon emissions arising from use of this network and how these might be mitigated. The county council would want to work closely with Highways England to identify measures to reduce carbon emissions on the trunk road network, eg by installation of Electric Vehicle charging points to encourage electric vehicles, and understand how these will be brought forward, their impact on emissions reduction and how they dovetail with measures that local partners are taking on the local transport network and across other sectors.	Information on carbon emissions relating to the Proposed Scheme is provided in the ES Chapter 14: Climate (**AS-004).** The Applicant has recently secured additional funding to review potential environmental opportunities around the scheme. The Applicant will work with NCC to develop potential feasibility study to assess the implementation of such opportunities.	Under discussion	
Public Health (RR-002-22)		The county council makes the following general comments in respect of its role as having public health responsibilities: • Welcome reductions in driver stress for both general well-being and accident reduction potential • Easier and safer access across the A47 for pedestrian, cycling and equine modes of transport would be welcomed. The council would want to ensure where possible that severed access for these non-motorised users where existing routes are cut off is still easy to reach and does not make physical activity and access to existing paths and networks more difficult• Severing of existing routes should as far as possible not result in increased traffic through villages and residential areas • Residents currently or likely to be affected by noise, vibration and potential increased pollution are screened for impact and potential mitigating action • Highways England should give consideration to the possible impacts on agricultural and allotment lands through increased NOx and associated ozone generation.	The Applicant acknowledges the points raised by Norfolk County Council National Highways aims to improve the traffic flow, reducing journey times on the route, increasing the route safety and resilience, and improving the environment. Impacts on non-motorised users are considered in ES Chapter 12: Population and Human Health (previously **APP-050** resubmitted at Deadline 1 **TR010040/APP/6.1 Rev 1**). Mitigation and enhancement measures for safer crossing points and diversions for existing routes are included in the design and shown on General Arrangement Drawings (**TR010040/APP/2.6 Rev 1**). The Applicant considers that the overall package of Walking, Cycling and Horse-Riding is appropriate and the two overbridges crossing the realigned A47 provide appropriate crossings to meet the needs of such users. The Applicant has undertaken a survey and an analysis of the results, which supports the Applicant's conclusion, is set out in Appendix A. ES Chapter 11: Noise and Vibration (previously **APP-049** resubmitted at Deadline 1 **TR010040/APP/6.1 Rev 1**) considers potential impacts of the Scheme. The approach to this assessment follows the Scoping Report (February 2018) and subsequent agreed Scoping Opinion (March 2018) (**APP-116**), in combination with DMRB LA 111. As per DMRB LA105, nitrogen sensitivity is only assessed on designated sites with nitrogen sensitivity.	Under discussion	
Discharge of Requirements (RR-002-23)		There are ongoing discussions with the applicant and the District Councils affected by this scheme as to how best the discharge of requirements should be undertaken. One option might be that there is a single "lead" Authority discharging the requirements. An alternative option would be that each local authority discharge those requirements within their respective area / statutory remit. It is understood that the applicant is prepared to fund the above "discharging" work given the significant resource implication.	The Applicant is continuing discussions with Norfolk County Council and Broadland District Council regarding the draft Requirements as set out in the dDCO (**TR010040/APP/3.1 Rev 1**). As the application is for a highway scheme the dDCO Schedule 2 (**APP-016**) includes for the Requirements to be discharged by the Secretary of State following consultation with the appropriate body for the particular requirement.	Under discussion	

APPENDICES

Norfolk County Council

Community and Environmental Services
County Hall
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Norwich
NR1 2SG

via e-mail
FAO: Nikki Rowley-Todd
Highways England – Project Manager

NCC contact number: [redacted]
Textphone:

Your Ref: A47 Blofield
Date: 16/09/2020

My Ref: FW/2020_0688
Tel No.: [redacted]
Email: [redacted]@norfolk.gov.uk

Dear Mrs Rowley-Todd,

The Dualling of the A47 Blofield to North Burlingham and Associated Junction Improvement Works – Consultation Response to the Scheme Update

Thank you for your letter dated 9th September 2020 requesting consultation feedback on the scheme update. We have had a look through this letter and the attached document. We have also been indirect consultation with the Highways England design team at SWECO who have approached us on a number of occasions to discuss the design since 2018. A summary of the recent correspondence relating to this scheme in 2020 is given in the table below.

Date	LLFA Letter Ref	Content
17/08/2020	FW2020_0514	Initial review of the Drainage Strategy
04/08/2020	FW2020_0560	Initial review of the Flood Risk Assessment
16/08/2020	FW2020_0688	Consultation response to the scheme update
15/9/2020	FW2020_0695	Provision of pre-application flood risk information for two points within the scheme area.
16/9/2020	FW2020_0703	Consultation response

Flood Risk Assessment Comments

Within the Flood Risk Assessment (FRA), the LLFA guidance is not mentioned, even though the current Environment Agency guidance on the preparation of FRA clearly states that plans for managing surface water should be in line with guidance from the Lead Local Flood Authority and sustainable drainage principles.

The FRA discusses the surface water flood history and notes the 'high impact' flooding incident of 2019 which closed the western bound carriageway in Blofield. As a 'high impact' local flood event, the LLFA would expect further comment regarding the cause, impacts and remedial works within the body of the report. At present there are only limited remarks in the conclusion. A plan with the approximate location and extent of this specific flood would be considered appropriate for inclusion (either as a separate plan or on an existing plan). As some of the existing drainage systems are proposed to remain in use and unchanged, it would be appropriate to confirm whether the area of the flood is served by highway drainage that is proposed to remain unaltered. If these two areas overlap, it

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would be appropriate for the FRA to discuss whether the existing drainage system has been reviewed to confirm its current design capacity is acceptable.

The groundwater flood risk is considered throughout the FRA and is indicated to be at a considerable depth below the surface. Yet within the FRA, no evidence or indication of the groundwater level is given. We are aware that groundwater has had further assessment and consideration in the EIA, the Groundwater Assessment and the Technical Note on the Deep Drainage. It is reasonable to expect the FRA to contain a summary of the existing ground water conditions and an assessment of the associated flood risk at and surrounding the site.

The site crosses some surface water flow paths. Some reference to the surface water flow paths has been made in the FRA. However, there are no plans with clearly marked up areas that identify the flow paths in conjunction with the proposed road and drainage design. This would be beneficial for assessing the interaction of the scheme with the flow paths and should be prepared.

In addition, the FRA does not report on the matter of surface water being redirected along existing flow paths as indicated in the drainage strategy. The LLFA would seek confirmation that the redirected flow does not increase the on-site and off-site flood risk. The further information the LLFA would seek is to address this concerns is;

- identification of the redirected flow path;
- identification of the flow paths receiving the additional flow;
- the anticipated additional amount of overland flow; and
- the identification of off-site property likely to be impacted.

There is currently no reporting or summary of the pre-development and post-development runoff rates and the associated attenuation volumes within the FRA.

The FRA does not currently include an assessment of suitable SuDS options. The FRA indicates that infiltration has been selected as a means of surface water disposal. The LLFA is aware from the drainage strategy that infiltration testing has been undertaken. However, there is no discussion of the infiltration testing or its results in the FRA. As the surface water flood risk management approach depends on infiltration to dispose of surface water, it would be appropriate for the FRA to report on these results.

Furthermore, there is no recorded consideration of the SuDS in terms of water quantity, water quality, amenity and biodiversity.

A summary of the Planning Inspectorate scoping opinion response in the FRA states that

> *"SuDS schemes should be designed to provide for habitat enhancement."*

However, there is no indication in either the FRA or the Drainage Strategy that habitat or environmental enhancement opportunities have been either sought or considered in relation to SuDS selection and design. A summary of enhancement opportunities considered relating to SuDS be included in the FRA.

[redacted]

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In relation to the drainage design, the FRA confirms that during consultation with the LLFA, it was requested that

> *"Drainage mitigation should provide sufficient attenuation for a 1 in 100-year event including an allowance for future climate change"*

At present, some elements of the current drainage design do not meet these standards.

The FRA has not provided any information about the management of surface water flood risk during the construction phase. The FRA should be revised to contain information about the construction phase surface water management and any temporary measures that would be in place.

The FRA has not included any consideration of the future maintenance and management provisions proposed for the surface water management features and structures. This should be clarified in the revised FRA report.

Drainage Strategy Comments

As previously discussed in the FRA section, the LLFA had stated the requirement for the surface water drainage to attenuate the 1% AEP (1 in 100 year) plus climate change event. This is supported by the DMRB document CG 501 – Design of Highway Drainage Systems, NPPF and the SuDS National Technical Standards.

However, at present the drainage design does not meet this standard. The drainage strategy has stated it would only design the highway drainage systems up to a 2% AEP (1 in 50 year) storm. There is no mention of designing for the 1% AEP (1 in 100 year) plus climate change storm, rather than the 1% AEP storm with climate change allowance would be used to assess the risk.

In addition, the infiltration basin and the soakaways are stated as being design to a 10% AEP (1 in 10 year) storm with 20% climate change. The drainage strategy states that a "check for flooding in a 1 in 100 year storm with 40% allowance for climate change" would be performed rather than designing for the 1% AEP storm with climate change.

The LLFA have been clear in previous correspondence (which are appended to the drainage strategy) and in their policy guidance document (*Norfolk LLFA Statutory Consultee Guidance Document)* that they will seek the nationally accepted standard that restricts the surface water runoff from a greenfield site to the greenfield runoff. In addition, the correspondence appended to the drainage strategy clear states

> *"Any drainage mitigation for the should attenuate the post development runoff rate and volume to the equivalent pre development greenfield rate and volume up to the 1 in 100 plus climate change allowance."*

Therefore, a suitably sized attenuation for the additional runoff volume for the 1% AEP storm plus climate change will be sought by the LLFA.

The LLFA recommends the attenuation provided in the infiltration basin and soakaways proposed drainage design is reviewed and brought into accordance with these standards.

[redacted]

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Furthermore, the drawings provide the soakaways and infiltration basin size and the drainage strategy report discusses the infiltration testing. However, no half drain times are made available at present. In future drawing and report revisions, the half drain times are expected to be provided.

The drainage design reviewed with the drainage strategy indicated the soakaways were very close to the infiltration as shown in drawing HE551490-GTY-HDG-000-DR-CD-30002. One of the soakaways is drawn very close beside the infiltration basin and the LLFA is concerned the performance of the soakaway and the basin could be reduced due to their close proximity to each other. Furthermore, the reasoning supporting the position of some of the soakaways is not apparent. Some soakaways are located behind residential properties some distance away from the road, while other soakaways are positioned to the south and south east of the infiltration basin with a large amount of space between the features. Please clarify the use of space in relation to the positioning of the soakaways and whether the distances between the soakaways, the basin and the properties are appropriate? The LLFA will await the submission of appropriate supporting evidence.

The use of swales as vehicle access ways is unusual due to pollution control and user safety issues. At present the *"drivable swale"* features are identified on the plans included in the drainage strategy. However, no outline design information has been provided about these features, such as a typical cross section. Further information is required about the design of these dual-purpose features that demonstrates they are both safe to the environment and the site users. The LLFA requests the provision of information regarding the maximum depth of water expected and the supporting environment assessment for the drivable swale at each location.

Within the drainage strategy there is mention of constraints to the drainage design to the proposed footpaths. However, it is not clear from the drainage strategy what these constraints are. Clarification of what the constraints are and the options that have been discounted for managing the runoff from the footpaths are requested by the LLFA.

The drainage strategy has identified that some drainage areas would remain unchanged on the existing carriageway, although these are not identified specifically report. For the existing drainage areas that would remain unchanged, the LLFA is interested in the water quality management aspects of these systems. While the surface water runoff maybe unaltered as there is no change in the impermeable area, there is an increase an expected increase in future traffic. Therefore, an increase in the future pollution and contaminates in the surface water runoff is expected. The LLFA is seeking confirmation whether an assessment of the water quality on these retained drainage areas has been undertake and requests the results. Further information is requested should any additional water treatment measures be included.

It is noted that vortex interceptors and dedicated spillage containment tanks have been mentioned in the initial design summary and on occasion through the report. However, there is no confirmation as to whether these features will be included in the scheme's design. Please clarify whether these features will be included in the design or not.

Within the drainage strategy, there has been minimal mention about any required remedial works within existing unchanged systems. The LLFA seeks confirmation from Highways

[redacted]

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England of any potential remedial works are considered necessary and whether they will be undertaking them within the project area and this scheme.

The drainage strategy indicates there was no ground investigation was conducted to the north of the eastern tie-in. At present, the design is reliant on historical infiltration rates and there is an intent to undertake infiltration test at detailed design stage. The LLFA can confirm that infiltration testing would be required in this location in accordance with BRE365. Please can you confirm in the drainage strategy when this is likely to occur.

The future maintenance and management provisions are proposed at a high level in the drainage strategy. This responsibility is proposed to be split between Highways England and Norfolk County Council. However, a few of the structures need further clarification about who is anticipated to be responsible for them in the future, such as the drivable swales, the dry culverts and drainage from the allotments. Clarification within the drainage strategy will be sought by the LLFA.

In addition, the drainage strategy has not provided any information about the construction phase drainage works that would be installed or any information regarding the phasing of the construction works. Further information within the drainage strategy about the construction phase drainage works and any temporary measures that would be in place is requested.

Groundwater Assessment Comments

To date, no Groundwater Assessment has been provided for review. It is noted that the current drainage strategy specifically mentions that the drainage strategy should be read in conjunction with other documents including the groundwater assessment.

Should you or your design team have any further queries, please contact the LLFA directly.

Yours sincerely,

Sarah

Sarah Luff
Strategic Flood Risk Planning Officer

Lead Local Flood Authority

Disclaimer
We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue.

[redacted]

Norfolk County Council Community and Environmental Services
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via e-mail
FAO: Jason Bell
SWECO

NCC contact number: [redacted]
Textphone: [redacted]

CC: Stephen Faulkner
Norfolk County Council Principal Planner

Your Ref: A47 Blofield – Drainage Strategy
Date: 22 December 2020

My Ref: FW/2020_0514
Tel No.: [redacted]
Email: [redacted]@norfolk.gov.uk

Dear Mr Bell,

The dualling of the A47 Blofield to North Burlingham and associated junction improvement works – Flood Risk Assessment and Drainage Strategy Review

Thank you for the providing the draft Flood Risk Assessment (FRA) and Drainage Strategy (DS) for review issued by your email on 3rd December 2020.

We note the FRA and Drainage Strategy has taken on board and addressed a large number of our recommendations and requirements as identified in our previous pre-application responses. We have some further comments and some matters are yet to be addressed. These are identified in the text below.

Flood Risk Assessment

Section 5.2.5 – In the information presented from HA DDMS, it is not clear what the bracketed numbers indicate. For example, *"five very low severity (0-2) flood events between 2012 and 2018 east of North Burlingham where the carriageway and the layby were flooded"*, however, it is not clear what the 0-2 indicates. Should any further updates of the FRA occur, we would advise you to provide further clarification.

Section 8.2.6 – It is not clear how it is possible to state that *"the existing catchments areas are unknown"* in the same paragraph as stating that *"the proposed scheme reduces the impermeable area"*. Please review this paragraph and provide clarification when updating the FRA.

The FRA now provides information on the post-development runoff volumes and half drain times. However, we are unable to observe a summary of the pre-development runoff rates within the FRA.

The FRA is acknowledged to include some discussion on the selection of SuDS with limited consideration to given to water quality treatment benefit. It is noted that in the previous version of the draft FRA, the scoping opinion response from the Planning Inspectorate was stated that *"SuDS schemes should be designed to provide for habitat enhancement."* In the latest draft of the FRA, there is no evidence that consideration of opportunities to the use of SuDS would support the enhancement of amenity and

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biodiversity. However, in the drainage strategy some limited information is provided. Consistency of information across the two documents should be sought.

Section 4.2.2 – Identified the LLFA's requirement that the *"Siting of the culverts must be based on topographic survey rather than relying on LiDAR data"*. However, the FRA acknowledges in section 8.3.8. that the flow lines were *"derived from Environment Agency LiDAR information"*.

It is noted that the information associated with the flood flow routes have been discussed in the drainage strategy but not in the FRA.

The FRA has not provided any information about the management of surface water flood risk during the construction phase. The FRA should contain information about the construction phase surface water management approach and any temporary measures that would be in place.

Drainage Strategy

It is noted that the road carrier drain and the road crossing drain are the same symbol and colour. It is also noted that the redline boundary and the relief pipes are the same symbol. While some of these are identified through labelling many are not.

The need for further infiltration testing at the eastern end of the site remains and the selection and design of either the infiltration basins/geocelluar soakaways/granular fill soakaways is dependent up this.

The drivable swale identifies a modelled water depth of 0.18m. It is noted that no further assessment was not reported for hazard to people and vehicles using the drivable swale as no information is included relating to flow velocity or hazard rating was provided in the report.

We acknowledge that the proposed infiltration basin/soakaways depths of up to 4.5m is in accordance with the Environment Agency's requirements.

Relating to the continuation of the surface water flow paths, the catchment plans are now helpfully included and further explanation is included within the text. However, there is no explanation of term 'pour points' used on the plans within the drainage strategy. It was later indicated in the Catchment Hydrology Note that the pour points were specified locations where flow accumulation lines crosses the proposed scheme. What remains unclear is whether these pour points would continue to occur and could cross the propose road in an uncontrolled manner?

Some limited environmental improvement opportunities have been considered and are to be developed further at the detailed design stage.

The drawings have taken on the LLFA's previous comments. On review of the drawings there are a couple of items that are unclear in the notations. For example, it is not clear what the numbers within the square boxes (such as 12) are associated with.

[redacted]

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We note that the SC6, SC7 and SC8 are identified as 'TBC' on the drawing HE551490-GTY-HDG-000_DR-CD-30026, although these structures are not located at the eastern end of the scheme. Therefore, it is unclear why these structures are considered as 'TBC'.

The drainage strategy has not provided any information about the management of surface water flood risk during the construction phase. The drainage strategy should contain information about the construction phase surface water management approach and any temporary measures that would be in place.

Should you have any further queries, please contact the LLFA directly.

Yours sincerely,

Sarah

Sarah Luff
Strategic Flood Risk Planning Officer

Lead Local Flood Authority

Disclaimer
We have relied on the accuracy and completeness of the information supplied to us in providing the above advice and can take no responsibility for incorrect data or interpretation, or omissions, in such information. If we have not referred to a particular issue in our response, it should not be assumed that there is no impact associated with that issue.

[redacted]

Norfolk County Council Community and Environmental Services
County Hall
Martineau Lane
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NR1 2SG

via e-mail
FAO: Jason Ball
SWECO

NCC contact number: [redacted]
Textphone: [redacted]

CC: Stephen Faulkner
Norfolk County Council Principal Planner

Your Ref: A47 Blofield – Drainage Strategy
Date: 5 July 2021

My Ref: FW/2021_0516
Tel No.: [redacted]
Email: [redacted]@norfolk.gov.uk

Dear Mr Ball,

The dualling of the A47 Blofield to North Burlingham Dualling and improvement works – Revised Flood Risk Assessment and Drainage Strategy Review

Thank you for the providing the revised draft Flood Risk Assessment (FRA), the Technical Note on Catchment Hydrology, Drainage Strategy (DS) and the Outline Water Monitoring and Management Plan for review issued by your email on 16 June 2021.

We note the FRA and Drainage Strategy has taken on board and addressed a large number of our recommendations and requirements as identified in our previous pre-application responses. We have some further comments and some matters are yet to be addressed.

Both the FRA and the Technical Note on Catchment Hydrology indicate the overland flow path catchment sizing is currently based on Lidar topographical data and would be reassessed in the next staged of design once local topographic data is collected to ensure that appropriate flow assessments are made to direct suitable sizing. The LLFA seeks reassurance that this re-assessment of the catchment boundaries will be undertaken once topographical survey is available.

The FRA is now supported by the Outline Water Monitoring and Management Plan that considers the management of surface water flood risk during the construction phase. The LLFA seeks re-assurance that this plan will be updated at each stage of the design and build process and that actions identified in this plan are committed to and will be undertaken at appropriate stages. This is to ensure the protection of the integrity of the proposed drainage systems and subsequentially people, property and the environment.

The drainage strategy acknowledges the need for further infiltration testing at the sites of the infiltration features to confirm the specific location performance. In addition, further infiltration testing is necessary at the eastern end of the site remains and the selection and design of either the infiltration basins/geocelluar soakaways/granular fill soakaways is dependent up this. These further infiltration tests were scheduled for "Q4 2020/Q1 2021". Have they been undertaken yet?

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Within the Drainage Strategy Report, some limited environmental improvement opportunities have been considered and are to be developed further at the detailed design stage. We acknowledge that an alternative drainage system in the initial stages of design consideration that aims to enhance the environmental offering has been submitted as a separate request for review. A separate response will be issued.

Should you have any further queries, please contact the LLFA directly.

Yours sincerely,

Sarah

Sarah Luff
Strategic Flood Risk Planning Officer

Lead Local Flood Authority

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[redacted]

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via e-mail
FAO: Sophie May
SWECO

NCC contact number: [redacted]
Textphone: [redacted]

CC: David Cummings
Norfolk County Council Planner

Your Ref: A47 N Tuddenham to Easton
Date: 15 December 2021

My Ref: FW2021_1071
Tel No.: [redacted]
Email: [redacted]@norfolk.gov.uk

Dear Ms May,

A47 North Tuddenham to Easton Improvements – LLFA Review of the Statement of Common Ground

Thank you for your email to the LLFA on 10 December 2021 requesting a review of specific actions with the A47 Blofield to North Burlingham Improvements Statement of Common Ground. The LLFA have reviewed the highlighted items. For clarity the information provided along with the latest LLFA response has been provided in the table below.

Norfolk County Council Comment	Highways England Response	LLFA Updated Comments December 2021
6. What are the drainage design constraints to the footpaths and what options have been discounted to manage footpath run-off?	Where footpaths are included in the design, the road run-off would have to be drained into kerb and gulley systems instead of filter drains. This will be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.	Agreed based on this understanding that further work and review will be conducted Sarah Luff - 15/12/2021
9. Are there to be any remedial works within the unchanged systems?	Further surveys will be undertaken during detailed design to confirm if any remedial works are required. The Drainage Strategy confirms in section 9.7.1 that "Where it is proposed to utilise existing drainage, remedial works may be required, which could include flushing and minor repairs/replacement of existing pipes and chambers". Further details will be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.	Agreed based on this understanding that further work and review will be conducted Sarah Luff - 15/12/2021

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10. The LLFA can confirm that the infiltration testing would be required to the area north of the eastern tie in. When will this occur?	Infiltration testing was carried out in Apr-Jun and the results are currently being reviewed for input into detailed design. Further details will be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.	Agreed approach based on this understanding that further work and review will be conducted Sarah Luff - 15/12/2021
At the joint meeting with the EA and the LLFA, which discussed flood risk and drainage the following points were made: • The LLFA had informal accounts of flooding on the A47 resulting from overland surface water flow paths. The Proposed Scheme must accommodate these flow paths through the use of 'dry culverts'. Siting of the culverts must be based on topographic survey rather than relying on LiDAR data. • The LLFA requested that NCC's Highways department be consulted with regards to the nature of the pond at Lingwood Road and whether this receives highways runoff. • The LLFA stated that drainage design should be tested against a 40% allowance for climate change. • Any 'dry culverts' or alterations to ordinary watercourses would require consent from the LLFA. • The LLFA advised of the importance of reliable infiltration testing to inform the drainage design. • The assessment of climate change on groundwater features should take the form of a simple qualitative assessment. Currently EA projections suggest annual groundwater recharge would remain the same but with altered seasonal timing.	The siting and sizing of 'dry culverts during the preliminary design was based on LiDAR. A detailed topographic survey will be undertaken as part of the detailed design stage and the siting and sizing of 'dry culverts' would be re-evaluated at this stage. The pond at Lingwood Road, that would be infilled, is believed to receive water from highway runoff. The drainage is designed for the 100-year storm event with a 40% allowance for climate change. Infiltration testing, in accordance with BRE 365, has been undertaken throughout the DCO Boundary of the Proposed Scheme. Further infiltration testing will be undertaken, in areas where more information is required, as part of the supplementary GI to commence in Spring 2021. The impacts of climate change on groundwater flood risk is considered qualitatively. Further details will be included in the Drainage Strategy, to be updated during detailed design and consulted with the Lead Local Flood Authority, as per Requirement 8 of the dDCO.	Agreed based on this understanding that further work and review will be conducted Sarah Luff - 15/12/2021
LLFA queried the half drain down time of 40 hours for the infiltration basin which is greater than the CD 530 requirement of 24 hours. The freeboard or other justification was requested.	The infiltration basin is required to empty in 72 hours in accordance with CD 532 and there is a freeboard of 1.3m above the 1 in 100 year + 40% Climate Change water level.	Agreed based on the email between Sarah Luff and Mary Creedon dated 19/03/2021 Sarah Luff - 15/12/2021

Please ensure the Statement of common Ground accurately reflects the latest LLFA's comments. Should you have any further queries, please contact the LLFA directly.

Yours sincerely,

Sarah

Sarah Luff
Strategic Flood Risk Planning Officer

[redacted]