A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010059

7.28 Applicant's Responses to Deadline 7 Submissions

Rule 8(1)(c)

Infrastructure Planning (Examination Procedure) Rules 2010

Planning Act 2008

May 2021

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

The A1 in Northumberland: Morpeth to Ellingham

Development Consent Order 20[xx]

Applicant's Responses to Deadline 7 Submissions

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1 APPLICANT'S RESPONSES TO DEADLINE 7 SUBMISSIONS

1.1 INTRODUCTION

1.1.1. This document relates to an application for a Development Consent Order (DCO) made on 7 July 2020 by Highways England (the 'Applicant') to the Secretary of State for Transport via the Planning Inspectorate (the 'Inspectorate') under section 37 of the Planning Act 2008 (the '2008 Act'). If made, the DCO would grant consent for the A1 in Northumberland: Morpeth to Ellingham (the 'Scheme').

1.1.2. The Scheme comprises two sections known as Part A: Morpeth to Felton (Part A) and Part B: Alnwick to Ellingham (Part B), a detailed description of which can be found in Chapter 2: The Scheme, Volume 1 of the Environmental Statement (ES) [APP-037].

1.1.3. The purpose of this document is to set out the Applicant's response to submissions made at Deadline 7. The Applicant notes that Historic England made a submission at Deadline 7 [REP7-022] but confirmed that they had no comments. Mr James McDonald also submitted a representation on behalf of Mr John Davidson to confirm they will submit representations at Deadline 8 [REP7-023]. The Applicant has not commented on Historic England's and Mr McDonald's submissions at Deadline 7.

Table 1-1 – Northumberland County Council

Ref. No.	Response:	Applicant's Response:
Outline Construction Traffic Management Plan (REP6-058)		
1	We are satisfied that the revised document addresses our points previously raised and that the document will continue to evolve through the Construction process due to its Outline status.	1. The Applicant welcomes NCC's confirmation that they are satisfied that the revised CTMP [REP6-058 and 059] addresses their points raised.
2	In respect to the latest revision of the General Arrangement Plans (REP6-005), the revised plans show the agreed details in respect to the pinch point on West Linkhall road (Works No 29H) and the widening of the East Linkhall Road to 2-way carriageway (Works No 29I). There remains the need for a turning head at the northern end of East Linkhall Road where the future local highway is to stop and we are aware the applicant will be providing this in future submissions of the General Arrangement Plans once the detail of this has been determined. Ongoing discussions in respect to the issues of positive drainage being provided on the Rock South Farm access road (Works 30B) may also impact upon future versions of the General Arrangement Plans in this area.	1. The Applicant welcomes NCC's confirmation that they are satisfied that the revised layout of West Linkhall Road and the widening of the East Linkhall Road. 2. An update to the Book of Reference [REP6-015 and 016] and updated at Deadline 7 has confirmed the landowners of the existing track at the northern tie-in point of East Linkhall Road (chainage 60,200 of Work No 29I on the Works Plans [REP6-004]). A draft of the turning head layout has been shared with NCC for their review. Once this is agreed with NCC the position and detail of the turning head will be shown on the General Arrangement Plans at the subsequent deadline. 3. The Rock South Farm access road will, in terms of article 13(1) of the draft DCO, require to be completed to the reasonable satisfaction of NCC as local highway authority. This provides a mechanism to ensure that drainage arrangements are satisfactory. Discussions between the Applicant and NCC were held on 18 and 19/05/21. Two scenarios are currently being investigated to address the drainage performance on Rock South Farm. A further technical call with the drainage specialists has been arranged w/c 31/05/2021 to agree the drainage strategy.
Traffic Regulation Measures Plan (REP6-007)		
3	The revised plan confirms that the new sections of the Local Road Network within Part B of the scheme will have National Speed Limits applied to them as part of the scheme and therefore accord with the previous agreements on this matter.	1. The Applicant welcomes NCC's confirmation that they agree to the speed limits proposed. Part 2 of Schedule 11 to the draft DCO has been updated to include the national speed limit on the Linkhall and Rock Minstead access roads.
4	The Proposed Highway Adoption and Maintenance Responsibilities (REP6-009) will only be deemed acceptable to NCC with the support of the Memorandum clarifying the position in respect to the changes to scope has been prepared and agreed. The adoption of Rock South Farm access road is dependent upon the applicant resolving the issues with regard to positive drainage. Discussions continue with the applicant about drainage of Rock South Farm access road which needs to be resolved for NCC to be in a position to adopt the road.	1. A draft Memorandum of Understanding covering the maintenance methodology to agree the future asset ownership and maintenance responsibilities has been shared with NCC. A follow up meeting has been scheduled w/c 31/05/2021 for both parties to finalise this technical note in advance of Deadline 8a. 2. Discussions on Rock South Farm are detailed in item 2 above. It is still the intention for the Applicant to hand over the new access road to NCC as the local highway authority. The Rock South Farm access road will, in terms of article 13(1) of the draft DCO, require to be completed to the reasonable satisfaction of NCC as local highway authority. This provision provides a mechanism which would ensure that drainage arrangements are satisfactory. As part of the drainage aspects still under discussion, the duration of the Applicant's maintenance liability on this access road is still to be agreed to ensure the performance is such as will be appropriate in respect of a road to be adopted by the local highway authority. The way in which this will operate is intended to be agreed in writing between the parties and will be recorded in the Memorandum of Understanding to which NCC refers in its submission.

Ref. No.	Response:	Applicant's Response:
5	Further responses in relation to the responses from the Applicant submitted to Deadline 6 will be commented up, in conjunction with any ExA Questions, as part of our Deadline 8 submission.	1. The Applicant notes that NCC will submit further comments at Deadline 8.

Table 1-2 – The Environment Agency

Ref. No.	Response:	Applicant's Response:
Deadline 6 Submission - 7.24 Applicant's Response to Deadline 5 and 5a Submissions [REP6-040]		
Ref. No 138, Appendix iii- Indicative Longdike Burn Proposals		
1	We welcome the inclusion of Appendix iii Indicative Longdike Burn Proposals. This however confirms our concerns that delivering significant improvements along this reach of the Longdike Burn, to compensate for the culverted watercourses is unrealistic. The reach is largely unmodified, surrounded by unmanaged pasture, and it is questionable whether marginal planting is necessary or appropriate. It is suspected that deer grazing is suppressing natural regeneration along the burn.	1. The Applicant met with the Environment Agency on 18 May 2021 and one of the items discussed was the Longdike Burn. The Applicant considers that these measures would add benefit to the channel and speed up delivery of the regeneration as measures to prevent deer grazing on the new planting would be included as set out in item 2 below. 2. The Environment Agency express concerns that the natural planting is being supressed by deer grazing and therefore, it can be inferred that there is an expectation that younger trees will not develop to enhance / replace the older trees. The proposed planting will provide this opportunity and is secured through the measures outlined in Item 2. 3. The Applicant remains of the view that the package of mitigation and compensation measures which they have set out are sufficient to address satisfactorily the impact of the Scheme on watercourses. The Environment Agency agrees that the Applicant has done all it reasonably can to address impacts within the Order limits but still maintains that additional compensation is required and has proposed that this is addressed by the Applicant making a financial contribution towards the carrying out of offsite compensation works towards a water improvement project on the River Lyne to be carried out by the Environment Agency. Notwithstanding that the Applicant is of the view that their mitigation proposals are satisfactory, the Applicant is prepared to make a contribution towards offsite works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
2	We believe that although some planting is likely to assist the aging woodland present along the burn, deer management is likely to provide the greatest benefits. Without this management, the planted shrubs may fall prey to the browsing deer. Therefore, we do not feel the proposed plans offer any substantial compensation. In order to provide suitable compensation for the culverting of the watercourses associated with the scheme, it will be necessary to consider off site options.	1. With regard to deer management a response was provided against Item 61 in the Applicant's Responses to Deadline 6 Submissions [REP7-017]; *"It is considered that it is beyond the requirements for the Scheme to prevent deer from accessing this parcel of land. Nevertheless, industry recognised best practice measures can be put in place to reduce the impact of deer grazing young planting, and suitable tree protection will be specified at detailed design stage where it is known that deer are potentially an issue. Suitable tree protection may include tree guards of a minimum height of 1.5m for roe deer and 1.8m for fallow deer (both species present within desk study data obtained by the Applicant). As industry recognised best practice measures, these would*

Ref. No.	Response:	Applicant's Response:
		be identified and detailed within a Series 3000 specification document, which is secured by measures S-L11 and S-L13 of the Outline CEMP [REP6-025 and 026] (and as updated at Deadline 7).” 2. The Applicant remains of the view that the package of mitigation and compensation measures which they have set out are sufficient to address satisfactorily the impact of the Scheme on watercourses. The Environment Agency agrees that the Applicant has done all it reasonably can to address impacts within the Order limits but still maintains that additional compensation is required and has proposed that this is addressed by the Applicant making a financial contribution towards the carrying out of offsite compensation works towards a water improvement project on the River Lyne to be carried out by the Environment Agency. Notwithstanding that the Applicant is of the view that their mitigation proposals are satisfactory, the Applicant is prepared to make a contribution towards offsite works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
General comments on the schemes reported loss of watercourses and the need for meaningful compensation		
3	The loss of river watercourses through culverting, whether assessed as significant or not, still amounts to 427m, plus the impacts of the construction easement which will likely result in greater habitat loss or disturbance, both temporary and permanent. Compensating for the loss of watercourses by improving other watercourses through riparian planting is not direct like-for-like compensation. However, given that additional watercourse lengths could not be gained through the scheme, then increasing the river biodiversity and value elsewhere is the next best solution. We request that the Applicant seeks to deliver or support a meaningful compensation package elsewhere on the effected watercourses which are locally more degraded, unlike the Longdike Burn in the DCO which is in a relatively good state in comparison to many other stretches within its catchment.	1. A response was provided against item 6 of Applicant's Responses to Deadline 6 Submissions [REP7-017]; 2. “The Applicant considers that the measures proposed adequately mitigate and / or compensate for the impacts upon the watercourses and channels, as discussed below. 3. The Applicant can confirm that it is predicted that the Scheme would result in the loss of 427m, as detailed within Annex A - Approach to the Assessment of Losses and Gains of Watercourses [REP2-010]. This comprises 271m for Part A and 156m for Part B. 4. These values represent the loss of linear length of watercourse channel. The loss of watercourse channel does not just simply relate to the length of a culvert/culvert extension and does take into account features such as headwalls and other physical modifications to the channel, such as realignment of channels, that result in the loss of natural channel (including bank and associated riparian vegetation). For example, on Floodgate Burn, the proposed extension to the culvert is approximately 6.7m (see Culvert Mitigation Strategy [REP5-022]). However, due to the additional realignment of the channel, the loss of watercourse is calculated to be 40.6m. 5. The measurements have been informed by the length of culvert or culvert extension, Structures and Engineering Drawings and Sections REP5-004], Phase 1 habitat plans (Part A [APP-105 and REP2-010] and Part B [APP-155]) and aerial imagery. As such, the calculated loss of channel is accurate as far as reasonably practicable with the information available. 6. The Applicant can also confirm that 1,240m of riparian planting is to be provided. Noting that the riparian planting, which will provide improvements to the watercourses to offset the impacts is one of the compensation measures included in the Scheme for loss of watercourse, other measures included within the comprehensive mitigation package are:

Ref. No.	Response:	Applicant's Response:
		• Fish baffles • Realigned watercourses • Improvements to Longdike Burn; • Inclusion of natural beds within the culverts 7. This is a significant length when compared to the length of watercourse lost and is considered sufficient to also compensate for any short lengths of additional watercourse which may be lost when the construction requirements are known. This additional vegetation loss is shown on the Vegetation Clearance Plans for Change Request [REP4-040] for ease of interpretation by the Environment Agency a watercourse specific plan will be submitted at Deadline 8 [Riparian Planting Plan (document reference: 2.12)]. The Applicant continues to engage with the Environment Agency with regards to the loss of watercourse as a result of culverting across the Scheme. The position of the Applicant is that sufficient measures have been identified to mitigate and/or offset the assessed impacts, although the Environment Agency disagree. In the Environment Agency Deadline 5 Submission [REP5-044], the Environment Agency outlined that the culverting and loss of watercourses as a result of the Scheme could be offset / compensated outside of the DCO boundaries, this remains under discussion." 8. The Applicant remains of the view that the package of mitigation and compensation measures which they have set out are sufficient to address satisfactorily the impact of the Scheme on watercourses. The Environment Agency agrees that the Applicant has done all it reasonably can to address impacts within the Order limits but still maintains that additional compensation is required and has proposed that this is addressed by the Applicant making a financial contribution towards the carrying out of offsite compensation works towards a water improvement project on the River Lyne to be carried out by the Environment Agency. Notwithstanding that the Applicant is of the view that their mitigation proposals are satisfactory, the Applicant is prepared to make a contribution towards offsite works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
Ref. No 78, Appendix i Geomorphological Map		
4	The map only covers the area of the new bridge, and the reach directly adjacent to it. The map should include coverage for the whole reach included within the geomorphology walkover survey (between Felton weir, and Otter House). We request that geomorphology matters are pulled together to form a section in the updated geomorphological assessment. This should include a narrative on the stability of the gorge slopes, the interaction with the river and why the Applicant believes the proposed works to the north and south banks will not result in a deterioration of the river is pulled together to form a section of the updated geomorphological assessment.	1. Appendix A of the River Coquet Fluvial Geomorphology Assessment for Change Request [REP7-003] includes geomorphological and biotope mapping of the reach and the extents of the walkover survey completed to support the assessment. 2. Appendix A - River Coquet Fluvial Geomorphology Assessment – Valley Side-Channel Connectivity provides a narrative on the stability of the gorge slopes, the interaction with the river and why the Applicant considers that the proposed works to the north and south banks will not result in a deterioration of the river has been produced.
Deadline 6 Submission - 7.3 Updated Outline Construction Environmental Management Plan (Tracked) - Rev 5a [REP6-026]		
General Comments		

Ref. No.	Response:	Applicant's Response:
5	Our written representations submitted on 4 May 2021 for Deadline 6 are still applicable and are included in this response. We have also included some additional comments to reflect the updates to the outline CEMP in relation to Table 3-5 Environmental Statement Addendum – Stabilisation Works for Change regarding the provision of compensation.	1. Refer to responses 18 to 68 below.
Deadline 6 Submission - 7.26.4 Applicant's Written Summaries of Oral Submissions to Hearings - Appendix F - Otter Position Statement [REP6-048]		
6	Following a site visit, the EA provided the Applicant with pictures and grid references of 7 confirmed spraining locations within 200m of the scheme. We request that the Applicant updates their Otter Position Statement and provides detailed justification regarding why mammal shelves cannot be fitted within the Shipperton Burn culvert and would urge the Applicant to explore all options and solutions to barriers inhibiting installation.	1. The Applicant confirms that the Environment Agency provided recent evidence of otter (spraint) within 200m of Part B along Shipperton Burn during a meeting on 30 April 2021. 2. The Applicant has updated their position regarding otter on Part B, which is detailed in the Applicant's response to the Examiner's written questions 3, BIO.3.1, issued at Deadline 8. The response provided to BIO.3.1 represents a joint response by the Applicant, Environment Agency and Northumberland County Council. Within the response to BIO.3.1, the Applicant has confirmed that they have re-evaluated the position in light of the new evidence and now accepts that otter are present within the Order limits of Part B. *3.* Regarding the matter of installing a mammal shelf retrospectively within the existing Shipperton Burn Culvert (and the proposed extension to this culvert), the Applicant provided a response on this matter at Deadline 7 (Reference 69, Table 1-1 Environment Agency, Applicant's Responses to Deadline 6 Submissions [REP7-017]). "*The Shipperton Burn Culvert would be extended as part of the construction of Part B, with the extension being a mirrored design of the existing culvert. The Applicant has explored the feasibility of retrofitting a* 4. mammal shelf into the Shipperton Burn Culvert (including within the extension). Whilst it is feasible to consider a shelf in the extension, should a precast culvert design be used, the culvert dimensions (1.2m height by 2.0m width) prevent the retrospective installation of a mammal shelf within the existing culvert. This is not possible due to the lack of physical space for a person to install the shelf and also for the lack of physical space for the shelf and allowance of headroom. Further, the Applicant's engineers confirm that, as designers, under construction (Design and Management) (CDM) Regulations, there is a duty to eliminate hazards and reduce risks. In this case the confined space hazard can be avoided by not entering the culvert." 5. The Applicant confirmed this position with the Environment Agency during a call on 18 May 2021. The position was acknowledged during the meeting and subsequently agreed by the Environment Agency by email on 19 May 2021. This engagement is captured within the statement of common ground issued at Deadline 8. 6. The Applicant has proposed otter fencing at Shipperton Burn (in addition to three other locations along Part B; Western Tributary of Kittycarter Burn, White House Burn and Denwick Burn) to direct otter passage through the culvert beneath Part B. The Applicant has discussed and agreed the proposed location and length of fencing with the Environment Agency. The proposed fencing is captured and secured by Commitment ExA: B-B100 of the Outline CEMP [REP7-008 and 009] updated at Deadline 8 and presented on an updated Landscape Mitigation Masterplan Part B [REP6-018] submitted at Deadline 8.

Ref. No.	Response:	Applicant's Response:
		7. The Applicant has agreed with both the Environment Agency and Northumberland County Council that the proposed mitigation is sufficient to address their concerns regarding otter for Part B. As such, the assessment of, and proposed mitigation for, otter is agreed for the Scheme.
Deadline 6 Submission - 7.6C Statement of Common Ground with Environment Agency - Rev 2 [REP6-032]		
7	We are working with the Applicant to address the issues outlined in this letter and in our previous correspondence.	1. Noted. No response required.
Deadline 6 Submission - 7.6C Statement of Common Ground with Environment Agency - Rev 2 [REP6-032]		
8	The EA completed its review of the stage 1 hydraulic model. The hydraulic model is considered to be largely appropriate. However, we have identified some minor points for consideration and requested clarity on a few issues. We are also in the process of reviewing the stage 2 hydraulic model (post development modelling).	1. The Applicant thanks the Environment Agency for their review of the stage 1 (baseline) hydraulic model and the associated reporting. Comments were received by the Applicant on 7 May, with responses return to the Environment Agency on 14 May. Where possible, comments were addressed within the River Coquet Hydraulic Modelling Report for Change Request [REP7-006]. 2. The primary points raised by the Environment Agency in their review and the Applicant's responses, are as follows: • Evaluate the form loss values for the Felton Old Bridge and New Bridges, as they appear to be quite low. • Applicant's response: the guidance used (Joseph N. Bradley, Hydraulics of Bridge Waterways, U.S. Bureau of Public Roads, 1960) includes form loss values for a number of pier shapes with 0.38 being a high value. This value has been distributed over the footprint of the bridge resulting in a value 0.0012/m. These bridges are also not within the area of interest. • Undertake sensitivity testing on roughness and downstream boundary conditions (±20% on N and slope) and add the findings to the report. • Applicant's response: sensitivity testing and associated reporting was completed and issued to the EA on 10 May and is included within the River Coquet Hydraulic Modelling Report for Change Request [REP7-006]. • Add some detail to the report on how the outputs compare against anecdotal historic evidence (historic flood extents). • Applicant's response: commentary will be included in an update to the River Coquet Hydraulic Modelling Report for Change Request [REP7-006] and submitted to the examination at Deadline 8a along with the material set out in 4 below. • Consider adding photographs of key structures (A1, Old and New Felton Bridges) to the model report as this would aid in the review of the flow constriction layers and adopted form loss values. • Applicant's response: photographs of key structures will be included in an update to the River Coquet Hydraulic Modelling Report for Change Request [REP7-006] and submitted to the examination at Deadline 8a, once Environment Agency comments on the stage 2 (Scheme) hydraulic model and associated reporting are received, once Environment Agency comments on the stage 2 (Scheme) hydraulic model and associated reporting are received.

Ref. No.	Response:	Applicant's Response:
		3. Comments on the stage 2 (Scheme) hydraulic model and associated reporting are awaited. Once received, where appropriate, the River Coquet Hydraulic Modelling Report for Change Request [REP7-006] will be updated to address these comments, before being submitted to the examination at Deadline 8a.
A1 IN Northumberland: Morpeth to Ellingham Development Consent Order Application Planning Inspectorate Reference: TR010059 **EA Written Representations**		
Deadline 6 Submission - 7.24 Applicant's Response to Deadline 5 and 5a Submissions [REP6-040]		
Ref. No 138, Appendix iii- Indicative Longdike Burn Proposals		
9	We welcome the inclusion of Appendix iii Indicative Longdike Burn Proposals. This however confirms our concerns that delivering significant improvements along this reach of the Longdike Burn, to compensate for the culverted watercourses is unrealistic.	1. A response has been provided against Item 1 above.
10	Appendix iii does not provide plans for nutrient management measures or bankside stabilisation or the area of aquatic planting. This aquatic planting may not be suitable given the site already has potential marginal planting. However, this could not be confirmed due to the time of year and cold weather in spring 2021	1. Upon a more detailed review of the proposals, combined with discussions with the Environment Agency the Applicant has decided to remove the inclusion of nutrient management measures and bankside stabilisation. The aquatic planting is shown on the plan to be adjacent to the enhanced berm and include aquatic macrophyte planting with the potential for amphibious or reed planting. Further assessment would be undertaken during detailed design, at an appropriate time of year, to ensure the measures proposed complement and enhance the existing situation.
11	During a recent walk over of the reach, it was noted that mature alder were semi-continuous along the whole reach. A number of these trees had fallen into the channel, adding greater complexity to an already diverse channel. The reach is largely unmodified, surrounded by unmanaged pasture, and it is questionable whether marginal planting is necessary or appropriate. Tree cover along the burn is dominated by mature and post mature alder, with limited younger trees available to replace these older trees.	1. This is a similar question to Item 10, as such the response above applies here too. The Applicant is proposing enhancing the tree cover, as noted by the Environment Agency this is only semi-continuous. 2. In Items 1 and 2 above, the Environment Agency express concerns that the natural planting is being supressed by deer grazing and therefore, it can be inferred that there is an expectation that younger trees will not develop to enhance / replace the older trees. The proposed planting will provide this opportunity and is secured through the measures referred to in Item 2. 3. The Applicant remains of the view that the package of mitigation and compensation measures which they have set out are sufficient to address satisfactorily the impact of the Scheme on watercourses. The Environment Agency agrees that the Applicant has done all it reasonably can to address impacts within the Order limits but still maintains that additional compensation is required and has proposed that this is addressed by the Applicant making a financial contribution towards the carrying out of offsite compensation works towards a water improvement project on the River Lyne to be carried out by the Environment Agency. Notwithstanding that the Applicant is of the view that their mitigation proposals are satisfactory, the Applicant is prepared to make a contribution towards offsite works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
12	Natural regeneration was noted within pockets of the site, and it is suspected that deer grazing is suppressing natural regeneration along the burn. We believe that although some planting is likely to assist the aging woodland present along the burn, deer management is likely to provide the greatest benefits. Without this management, the planted shrubs may fall prey to the browsing deer. Therefore, we do not feel the proposed plans offer any substantial or approach compensation. In order to provide suitable compensation for the culverting of the watercourses associated with the scheme, it will be necessary to consider off site options.	

Ref. No.	Response:	Applicant's Response:
General comments on the schemes reported loss of watercourses and the need for meaningful compensation		
13	The loss of river watercourses through culverting, whether assessed as significant or not, still amounts to 427m, plus the impacts of the construction easement which will likely result in greater habitat loss or disturbance, both temporary and permanent. As such, if the Applicant fails to compensate adequately and meaningfully for this loss, they are potentially failing in their general duty to conserve biodiversity under the Natural Environment and Rural Communities Act 2006.	1. A response in relation to the loss of watercourse through culverting has been provided against Item 3. 2. The Applicant considers their duty, as a public authority, with regard the Natural Environment and Rural Communities (NERC) Act 2006 to be met. Section 40 of the NERC Act 2006 states that "*The public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*." "*Conserving biodiversity includes, in relation to a … type of habitat, restoring or enhancing a … habitat*." 3. The Applicant has proposed a range of measures which are considered to be suitable to offset the impacts of the Scheme with regard to the physical loss of watercourse channel. These measures collectively form the package of compensatory works and include riparian woodland planting (improvement to watercourse channels), design of realigned watercourse channels (138m, Part A) to be better (in terms of environmental condition and biodiversity value) than that lost, retrospective installation of fish baffles on the existing culvert of the River Lyne (Part A), replacement of the wooden baffles within an existing culvert of Longdike Burn (Part A) to increase the life span of this feature and improvements to 650m of Longdike Burn that falls within the Order limits. The position of the Applicant is that the measures identified are sufficient to offset the assessed impacts. 4. The Applicant remains of the view that the package of mitigation and compensation measures which they have set out are sufficient to address satisfactorily the impact of the Scheme on watercourses and meet the requirements of the 2006 Act. The Environment Agency agrees that the Applicant has done all it reasonably can to address impacts within the Order limits but still maintains that additional compensation is required and has proposed that this is addressed by the Applicant making a financial contribution towards the carrying out of offsite compensation works towards a water improvement project on the River Lyne to be carried out by the Environment Agency. Notwithstanding that the Applicant is of the view that their mitigation proposals are satisfactory, the Applicant is prepared to make a contribution towards offsite works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
14	Compensating for the loss of watercourses by improving other watercourses through riparian planting is not direct like-for-like compensation. However given additional watercourse lengths could not be gained through the scheme, increasing the river biodiversity and value elsewhere is the next best solution. We request that the Applicant seeks to deliver or support a meaningful compensation package elsewhere on the effected watercourses which are locally more degraded, unlike the Longdike Burn which is in a relatively good state in comparison to many other stretches within its catchment.	1. A response has been provided against Item 2 above.
Ref. No 78, Appendix i Geomorphological Map		

Ref. No.	Response:	Applicant's Response:
15	The map only covers the area of the new bridge, and the reach directly adjacent to it. The map should include coverage for the whole reach included within the geomorphology walkover survey (between Felton weir, and Otter House)	1. Appendix A of the River Coquet Fluvial Geomorphology Assessment for Change Request [REP7-003] includes geomorphological and biotope mapping of the reach and the extents of the walkover survey completed to support the assessment.
16	We welcome the narrative regarding the role the slopes of the gorge (River Coquet) have and are continuing to play in the supply of sediment, channel planform and flow dynamics. We request that the responses regarding this topic are pulled together to form a section in the updated geomorphological assessment. In particular, the updated geomorphological assessment should include a narrative on the stability of the gorge slopes, the interaction with the river and why the Applicant believes the proposed works to the north and south banks will not result in a deterioration of the river is pulled together to form a section of the updated geomorphological assessment.	1. Appendix A - River Coquet Fluvial Geomorphology Assessment – Valley Side-Channel Connectivity provides a narrative on the stability of the gorge slopes, the interaction with the river and why the Applicant considers that the proposed works to the north and south banks will not result in a deterioration of the river has been produced.
Deadline 6 Submission - 7.3 Updated Outline Construction Environmental Management Plan (CEMP) (Tracked) - Rev 5a [REP6-026]		
General Comments		
17	Our written representations submitted on 4 May 2021 for Deadline 6 are still applicable and are included in this response. We have also included some additional comments to reflect the updates to the outline CEMP in relation to Table 3-5 Environmental Statement Addendum – Stabilisation Works for Change regarding the provision of compensation.	1. Refer to responses 18 to 68 below.
CEMP and 7.9.1.1 Culvert Mitigation Strategy - Rev 1 [REP5-022]		
18	It is unclear what the hierarchy is between the CEMP and 7.9.1.1 Culvert Mitigation Strategy - Rev 1 [REP5-022] as there is a significant degree of overlap between the two documents. Both documents independently contain important details that are not apparent in the other document. We would welcome clarification on this.	1. As indicated in Applicant's Responses to Deadline 6 Submissions [REP7-017], the Culvert Mitigation Strategy [REP5-022] (as updated at Deadline 8) has been developed to aid the Environment Agency in their review of the following documents by providing a clear and concise summary: • Water Framework Directive Assessments Part A and Part B [APP-255 and APP-312]; • Structures Engineering Drawings and Sections - Rev 2 [REP5-004] • Annex A - Approach to the Assessment of Losses and Gains of Watercourses [REP2-010]. 2. Requirement 8(3) of the draft DCO requires the implementation of the measures in the culvert mitigation strategy. The Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) is the means by which mitigation measures are secured in detail and has been updated to include the measures which are detailed within the Culvert Mitigation Strategy [REP5-022] (and as updated at Deadline 8) as these measures are agreed with the Environment Agency.
Compensation and mitigation		
19	Within the scheme wide section of the outline CEMP, we request that specific acknowledgement of and the need for mitigation and compensation for the loss and damage/disturbance to the many watercourses crossed by the scheme is clearly stated. This needs to be independent of, but as detailed as and on a par with actions like S-B1, S-B2 or S-B20.	1. As indicated in Applicant's Responses to item 2 in Deadline 6 Submissions [REP7-017]: 2. "The Applicant has included a comprehensive mitigation strategy to offset the impacts of the Scheme on the watercourses and channels, this is summarised within

Ref. No.	Response:	Applicant's Response:
		the Culvert Mitigation Strategy [REP5-022]. The measures that are detailed within the Culvert Mitigation Strategy and are secured within the Outline CEMP through measure EXA S-W101 [REP6-025 and 026], which has been updated and submitted at Deadline 7. This measure reflects the impacts of the Scheme upon the watercourses. 3. EXA S-W101 is a Scheme wide watercourse / channel mitigation / compensation measure which has been developed in line with the measures S-B1 (habitat compensation) S-B2 (landscape mitigation) and S-B20 (biodiversity enhancement), this details that the measures outlined in the Culvert Mitigation Strategy are to be implemented."
20	We are still assessing whether the measures presented to compensate and mitigate for the impact of the scheme on the crossed watercourses is adequate. Aside from the Water Framework Directive, the EA has legal duties under the Environment Act 1995, the Water Environment (Water Framework Directive) Regulations 2017 and the Natural Environment and Rural Communities Act 2006 to ensure that watercourses are protected and enhanced for the benefit of present and future generations.	1. A response is provided against Item 3 Applicant's Responses to item 2 in Deadline 6 Submissions [REP7-017]. Further, the Applicant acknowledges the legal duties of the Environment Agency.
21	The current package of compensatory works includes 1240m (a combined total of riparian planting outlined in .9.1.1 Culvert Mitigation Strategy - Rev 1 [REP5-022]) of riparian planting to compensate for the loss of 427m of watercourse. The loss of 427m is considered a minimum figure as it only covers the length of the culvert and does not cover the easement either side of the new or extended crossings. Furthermore, it does not cover any vegetation removal and bank re-profiling that may be required to allow construction to take place. Nor does not consider the influence of the culvert on river processes beyond the footprint of the structure itself.	1. The Culvert Mitigation Strategy [REP5-022] has been updated at Deadline 8 to account for the discussions with the Environment Agency and changes to the riparian planting. 2. With regard to the Environment Agency considering that the loss is expected to be greater than 427m, the Applicant disagrees, and a response had previously been provided against Items 5 and 6 of the Applicant's Responses to item 2 in Deadline 6 Submissions [REP7-017] with the key points summarised below:-. • Annex A - Approach to the Assessment of Losses and Gains of Watercourses [REP2-010] has been informed by the length of culvert or culvert extension, Structures and Engineering Drawings and Sections [REP5-004], Phase 1 habitat plans (Part A [APP-105 and REP2-010] and Part B [APP-155]) and aerial imagery. As such, the calculated loss of channel is accurate as far as reasonably practicable with the information available. • The Culvert Mitigation Strategy [as submitted at Deadline 8] only identifies the length of culvert (new or extended) and the associated direct impacts, • The Applicant can also confirm that 930m of riparian planting is to be provided. • The impacts associated with vegetation clearance are shown on the [Riparian Planting Plan (document reference: 2.12) as submitted at this deadline. 3. The Applicant remains of the view that the package of mitigation and compensation measures are sufficient to address satisfactorily the impact of the Scheme on watercourses. The Environment Agency agrees that the Applicant has done all it reasonably can to address impacts within the Order limits but still maintains that additional compensation is required and has proposed that this is addressed by the Applicant making a financial contribution towards the carrying out of offsite compensation works towards a water improvement project on the River Lyne to be carried out by the Environment Agency. Notwithstanding that the Applicant is of the view that their mitigation proposals are satisfactory, the Applicant is prepared to

Ref. No.	Response:	Applicant's Response:
		make a contribution towards offsite works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
22	Watercourses such as Floodgate Burn or the River Lyne where substantial riparian woodland already exists, the loss and impact is not clearly represented and is expected to be much larger than 427m. Much of the claimed riparian planting is where existing riparian woodland already exists on these burns. The Applicant must clearly demonstrate not only the loss of watercourse due to culverting, but also the length of existing riparian habitat lost.	1. To assist the interpretation by the Environment Agency and demonstrate the net impact of riparian planting as a result of the Scheme a watercourse specific plan is being submitted at Deadline 8 [Riparian Planting Plan (document reference: 2.12)]. This has been developed to clearly demonstrate the loss of watercourse lost due to culverting, the length of riparian habitat lost and the mitigation measures incorporated within the Scheme, including natural beds and riparian planting. This is achieved by mapping: • Aerial imagery (i.e. demonstrating the current conditions) • Lengths and locations of the proposed riparian planting (as detailed in the Culvert Mitigation Strategy [REP5-022] (and submitted at Deadline 8)) • Locations of the watercourses (OS mapping derived) • Post Construction Scheme Layout [REP6-005] • Land plans [REP6-003] • Landscape Mitigation Masterplan Part A for Change Request [REP4-060] and Landscape Mitigation Plan for Part B REP6-018] (and as updated at Deadline 8) • Vegetation Clearance Plans [REP4-040] 2. From this information it is anticipated that the Environment Agency will be in a more informed position to understand the proposals and the differences between replacement and compensation planting 3. With regard to the Environment Agency considering that the loss is expected to be greater than 427m, the Applicant disagrees, and a response had previously been provided against Items 5 and 6 of the Applicant's Responses to item 2 in Deadline 6 Submissions [REP7-017] (summarised below). • Annex A - Approach to the Assessment of Losses and Gains of Watercourses [REP2-010]. has been informed by the length of culvert or culvert extension, Structures and Engineering Drawings and Sections [REP5-004], Phase 1 habitat plans (Part A [APP-105 and REP2-010] and Part B [APP-155] and aerial imagery. As such, the calculated loss of channel is accurate as far as reasonably practicable with the information available. • The Culvert Mitigation Strategy [as submitted at this deadline] only identifies the length of culvert (new or extended) and the associated direct impacts, • The Applicant can also confirm that 930m of riparian planting is to be provided. • The riparian planting proposed will either be on channels with clear banks or those with sporadic / semi continuous cover to provide an enhancement to the current conditions. 4. The Applicant remains of the view that the package of mitigation and compensation measures which they have set out are sufficient to address satisfactorily the impact of the Scheme on watercourses. The Environment Agency agrees that the Applicant has done all it reasonably can to address impacts within the Order limits but still maintains that additional compensation is required and has proposed that this is addressed by the Applicant making a financial contribution towards the carrying out of offsite compensation works towards a water improvement project on the River

Ref. No.	Response:	Applicant's Response:
		Lyne to be carried out by the Environment Agency. Notwithstanding that the Applicant is of the view that their mitigation proposals are satisfactory, the Applicant is prepared to make a contribution towards offsite works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
23	We require for the mitigation measures to be clearly stated, a commitment to the establishment of viable, sustainable natural beds within the key culverts and a comprehensive package of compensation measures. This should be clearly marked on a relatable mitigation and compensation plan, and should not be solely dependent on riparian planting.	1. The Applicant has agreed the approach to the provision of the natural beds with the Environment Agency in a meeting on 18 May 2021. The agreement reached with the Environment Agency is: a. Earsdon Burn The culvert will be designed to include a minimum natural bed depth of 150mm, with the low flow channel provided in a notch or via the provision of a deeper / wider section of natural bed to create the low flow channel should a culvert without a notch be chosen. The low flow channel is to be sized based upon the upstream natural channel width. b. River Lyne The culvert will be designed to include a minimum natural bed depth of 200mm, with the low flow channel provided in a notch or via the provision of a deeper / wider section of natural bed to create the low flow channel should a culvert without a notch be chosen. The low flow channel is to be sized based upon sections of the natural channel width in the upstream wooded area. A check will be undertaken to confirm the viability of this low flow channel maintaining 100mm depth of water above the natural bed during times of optimum fish passage. Should the notch solution be adopted, then detailed design will consider and include where feasible, baffles or other features to trap low levels of sediment on the bed of the culvert outside of the notch, to enhance the bed of the culvert for biodiversity purposes. c. Floodgate Burn The culvert will be designed to include a minimum natural bed depth of 150mm. As this culvert is proposed to be a 1800mm diameter pipe rather than a box culvert the provision of a low flow channel is not possible. Measures where feasible, will be incorporated within the culvert to prevent scour / erosion of the natural bed. d. The depth of natural bed on all the other watercourses impacted by the Scheme are to be as detailed within the current version of the Culvert Mitigation Strategy [REP5-022] (and as updated at Deadline 8) and Structures Engineering Drawings and Sections [REP5-004]. 2. Further detail has been added to Commitments A-W5, A-W6, A-W7, A-W9 and AW-11 of the Outline CEMP updated at Deadline 8 following the conclusion of the discussion over the design for this watercourse with the Environment Agency following the meeting on 18 May 2021.

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		3. A relatable mitigation and compensation plan, which includes the agreed position on natural beds, is provided in the updated Culvert Mitigation Strategy, as submitted at this Deadline 8. 4. Riparian planting is one measure within the compensation / mitigation strategy for the impacts of the Scheme on the channels as detailed within the Culvert Mitigation Strategy [REP5-022] and as updated at Deadline 8. The other measures included within the comprehensive mitigation package are: a. Fish baffles b. Realigned watercourses c. Improvements to Longdike Burn 5. With further information provided in the response to Item 21. 6. Additionally, the Applicant is prepared to make a contribution towards offsite compensatory works as requested by the Environment Agency. The details of the contribution and associated offsite works are currently under discussion with the Environment Agency.
24	The above comments are also applicable to 7.9.1.1 Culvert Mitigation Strategy - Rev 1 [REP5-022].	1. This is a repeat of previous questions given the relationship between the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) and the Culvert Mitigation Strategy [REP5-022] (and as updated at Deadline 8) as detailed in the response to Item 24 of this document.
Specific comments on individual actions		
Otters		
25	We welcome the inclusion of additional measures within the CEMP regarding otters. However, mitigation measures for commuting otters needs to be incorporated into the outline CEMP.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017], as quoted below. 2. "The response provided by the Environment Agency is understood by the Applicant to relate to Part B only. 3. As detailed in Appendix F Otter Position Statement [REP6-048], following ISH3, the Applicant held discussions with the Environment Agency on 23 and 30 April 2021 to explore the evidence for the presence of otter. Further possible evidence of otter adjacent to the Study Area for Part B was provided by the Environment Agency at the meeting on 30 April, and the Applicant is considering this and the potential need for fencing along Part B at key crossing locations." 4. Following Deadline 7, the Applicant has updated their position regarding otter on Part B, which is detailed in the Applicant's response to the Examiner's written questions 3, BIO.3.1, issued at Deadline 8. The response provided to BIO.3.1 represents a joint response by the Applicant, Environment Agency and Northumberland County Council. Within the response to BIO.3.1, the Applicant has confirmed that they have re-evaluated the position in light of the new evidence and now accepts that otter are present within the Order limits of Part B. 5. Accordingly, the Applicant has now proposed otter fencing at four locations along Part B (Shipperton Burn, Western Tributary of Kittycarter Burn, White House Burn and Denwick Burn) to direct otter passage through culverts beneath Part B that are

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		of a sufficient size to offer safe passage. The Applicant has discussed and agreed the proposed location and length of fencing with the Environment Agency and Northumberland County Council. The proposed fencing is captured and secured by Commitment ExA: B-B100 of the Outline CEMP [REP7-008 and 009] updated at Deadline 8 and presented on an updated Landscape Mitigation Masterplan Part B [REP6-018] submitted at Deadline 8. 6. The Applicant has agreed with both the Environment Agency and Northumberland County Council that the proposed mitigation is sufficient to address their concerns regarding otter for Part B, which is captured in the statements of common ground issued at Deadline 8. As such, the assessment of, and proposed mitigation for, otter is agreed for the Scheme.
Action S-GS4		
26	This does not align with the updated measures in S-W1 in relation to the temporary surface water drainage strategy.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017], as quoted below. 2. "The Applicant considers that the Environment Agency have not fully realised that these two measures relate to different phases of the Scheme and therefore, there is no requirement for the two measures to align. 3. S-GS4 of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) relates to the operational drainage scenario, whereas S-W1 relates to the surface water drainage strategy during construction. This strategy will be prepared by the Main contractor at the start of construction."
Actions S-W1 or S-W8		
27	We would like to see reference made to the requirement to report any pollution incidents to the water environment to the EA's Pollution Incident Hotline (0800 80 70 60).	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017]. 2. Detail was added to measure S-W8 of the Outline CEMP issued at Deadline 7 [REP7-008 and 009] (and as updated at Deadline 8). The detail added states: '*Should any pollution incidents to the water environment occur, they will be reported to the Environment Agency Pollution Incident Hotline (0800 80 70 60*)'.
Action S-W1, (b)		
28	We welcome the statement to use seeded biodegradeable fibre matting encourage re-vegetation of disturbed watercourse banks. This action should be updated to include a commitment to consider and use green (soft) and hybrid engineering solutions as alternatives to hard solutions for erosion control, scour management, wing walls etc.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017]. 2. Measure SW-1(b) of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) was updated at Deadline 7 to reflect this request. This now states (with the new text underlined): 3. 'The use of seeded biodegradable fibre matting to encourage re-vegetation after works on, or near, the banks, and consideration of the use of green (soft) and hybrid engineering solutions as alternatives to hard solutions for erosion control, scour management, and wing walls. This is applicable to the larger watercourses such as: The River Lyne, Fenrother Burn, Earsdon Burn, Longdike Burn and the River

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		Coquet in relation to Part A, and Denwick Burn and its tributaries and Shipperton Burn in relation to Part B.'
Action S-W6		
29	We welcome the commitment to the inclusion of gravel beds throughout the length of the new culverts. This commitment should be further strengthened to include minimum natural bed depths and minimum water depths (to support migratory fish species) for the new culverts. The Scottish Environmental Protection Agency's Good Practice guide for River Crossings provides a useful series of recommendations reflecting different sizes of culverts: • For culverts less than 1.2 m diameter or height (internal height) the invert should be buried at least 15 cm below the natural bed level. • For culverts less than 1.2 m diameter or height (internal height) the invert should be buried at least 15 cm below the natural bed level. • For culverts greater than 1.8 m diameter or height (internal height) the invert should be buried at least 30 cm below the natural bed level. CIRIA's Culvert, Screen and Outfall Manual is slightly more rigid and states that the depth of a natural bed is between 300-600mm.	1. The Applicant has reached agreement with the EA on natural beds which is set out in Item 23.
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34	We welcome the inclusion of a hydromorphologist for the detailed design of the culverts. However, table 2.1 (environmental consultant – designer) implies a generalist role. This table should be updated to reflect the use of a hydromorphologist.	1. Table 2-1 of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) has been updated with a new row which outlines the role of the hydromorphologist, and reference S-W6 has been updated to reference the amended Table 2-1.
Table 3-a - REAC Referencing System, S-W100		
35	It is important that the riparian planting is not just stated as compensation for the loss of watercourses, but also for the loss of existing riparian woodland. Compensating for the loss of watercourses by improving other watercourses through riparian planting is not direct like-for-like compensation. However, given additional watercourse lengths could not be gained through the scheme, increasing the river biodiversity is the next best solution. We recognise that the DCO boundary limits the opportunities for compensation. Therefore, we request that the Applicant considers the provision off site measures.	1. A response to this is provided against Items 2, 3 and 22 above.
Action B-B5 a) and b)		
36	We welcome the commitments outlined in Action B-B5 a) and b).	1. The Applicant notes the Environment Agency's position.
A-B2 and A-B11		
37	These measures require updating following the Environment Agency's discovery of several otter spraints on the Shipperton Burn within 200m of the scheme, including spraints just upstream of the existing road boundary.	1. For clarity, measures A-B2 and A-B11 relate to Part A of the Scheme. As detailed in the Applicant's response to BIO.3.1 issued at Deadline 8, which represents a joint response with both the Environment Agency and Northumberland County Council, the Environment Agency and Northumberland County Council are satisfied with the impact assessment and mitigation for otter for Part A. 2. Shipperton Burn is located on Part B. As confirmed within the Applicant's response to BIO.3.1, the Applicant held discussions with the Environment Agency and, during

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		a meeting on 30 April 2021, the Environment Agency provided recent evidence of otter adjacent to the study area for Part B at Shipperton Burn. The Applicant has re-evaluated the position in light of this new evidence and now accepts that otter are present within the Order limits of Part B. 3. Accordingly, the Applicant has now proposed otter fencing at four locations along Part B (Shipperton Burn, Western Tributary of Kittycarter Burn, White House Burn and Denwick Burn) to direct otter passage through culverts beneath Part B that are of a sufficient size to offer safe passage. The Applicant has discussed and agreed the proposed location and length of fencing with the Environment Agency and Northumberland County Council. The proposed fencing is captured and secured by Commitment ExA: B-B100 of the Outline CEMP [REP7-008 and 009] updated at Deadline 8 and presented on an updated Landscape Mitigation Masterplan Part B [REP6-018] submitted at Deadline 8. 4. The Applicant has agreed with both the Environment Agency and Northumberland County Council that the proposed mitigation is sufficient to address their concerns regarding otter for Part B. As such, the assessment of, and proposed mitigation for, otter is agreed for the Scheme.
A-B7 and A-W7		
38	The design of the new channel should be based around the predicated discharges rather than existing conditions. In accordance with paragraphs 5.23 and 5.33 of the National Policy Statement for National Networks (2014), the design objectives should maximise the opportunities presented through the design of the new channel. The aim, as far as possible, accepting the local constraints, should be to re-establish the natural functioning of the channel, through naturalised flows, sediment transfer, patterns of erosion and deposition. Measures such as these will provide the most sustainable long term solutions delivering multiple benefits including climate resilience, sustainable flood management, improved biodiversity, reduced maintenance costs.	1. The Applicant provided a response to the Environment Agency's comment in item 39 at Deadline 7 [REP7-017]. 2. "It is assumed that by predicated discharges the Environment Agency mean the predicted future design flows (which in this instance is frequently taken to be the 1 in 100 year plus an allowance for climate change). 3. The Applicant does not agree that the channel should be designed around the future design flows as this could result in a change to the flood regime. Notwithstanding this consideration will be given to the potential to contain the flood flows within the channel during detailed design. This is secured through A-B7 and A-W7 of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8). 4. While A-B7 of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) covers the design of all the impacted watercourses across Part A, A-W7 relates to the tributary of the Fenrother Burn. The Fenrother Burn is a field boundary ditch and is not considered to be a watercourse as set out in Annex A - Approach to the Assessment of Losses and Gains of Watercourses [REP2-010], as such there is no natural functioning of this watercourse to reinstate." 5. The Applicant has agreed with the Environment Agency during a meeting on 18 May 2021 that the design objectives of the two key realigned channels (as identified by the Environment Agency) will be as follows: a. Tributary of Fenrother Burn The outline design provided in Figure 8 of the Water Framework Directive Assessment [APP-255] will be utilised for the reach between the access track and the A1 carriageway, should it not be feasible to enhance this section. For the reach between the access track and the junction, the banks will be slackened and the bed widened as appropriate, to generate more of a natural profile than that of an artificial / engineered field drainage ditch. Around the

Ref. No.	Response:	Applicant's Response:
		attenuation pond, the adjacent bank and that of the attenuation pond will be further slackened to enable ease of movement of biodiversity between the wetland habitat in the pond and that in the channel. b. Kittycarter Burn The principles for the tributary of Fenrother Burn will be adopted, however, it is acknowledged that there are additional constraints at this location, as there is also a utility corridor to accommodate.
A-W2		
39	Given the nature of the upstream catchment and the size of the culverts under the A1 (900mm diameter), the proposed culverts appear significantly over sized. Consideration should be given to downsizing these 2 culverts and reducing the depth of any natural bed to 150mm. This would reduce the scheme's carbon footprint.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017]. *"A-W2 of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) relates to the Cotting Burn Culvert only (ref 1.4) for which a rectangular culvert has been incorporated within the design. This is the smallest standard precast RC unit which can be used to meet the required performance criteria (flow conveyance and freeflow). The design of this culvert must also withstand the surcharge loading with a shallow depth of cover. Alternative piped solutions were considered using precast RC and High Density Polyethylene (HDPE) however this would require multiple pipes with a mass or reinforced concrete surround thus increasing the embodied carbon and introducing a larger length of culverted watercourse."* 2. The parameters for this culvert were discussed with the Environment Agency at a meeting on 18th May and the Applicant understands that the position is now agreed.
A-W6 (Priest's Bridge Culvert)		
40	There is insufficient information to determine whether the design of this culvert is appropriate to address the ecological requirements of the River Lyne. The River Lyne is morphologically active with sufficient energy for natural adjustment, localised sinuosity and bank erosion and sediment deposition processes operating.	1. The Applicant met with the Environment Agency on 18 May 2021 and agreed the design parameters for this culvert, this is detailed in the response to Item 23 and secured in A-W6 of the Outline CEMP [REP7-008 and 009] as updated at Deadline 8.
41	The existing culvert appears to be hindrance to fish passage due to the wide shallow flatbed which will promote high flow velocities. The inclusion of baffles within this structure is welcomed and will help mitigate the fish passage issues associated with this structure.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017]. 2. The Applicant notes the Environment Agency's agreement that the retrospective installation of fish baffles within the existing culvert of the River Lyne (not impacted by the Scheme) will help improve fish passage issues associated with the structure. The velocities in the culvert for Q100+CC = 1.29m/s, Low flows Q10 = 0.87m/s and Q90 = 0.346m/s. This information was provided to the Environment Agency during consultation. A wide invert would reduce velocities rather than increase them due to an increase in the wetted perimeter, this will aid the fish passage.

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42 43 44	The inclusion of a low flow channel within the proposed culvert is supported. However, it needs to be designed to enable fish to pass. The table below is an extract from CIRIA's Culvert, Screen and Outfall Manual and provides design criteria for flow velocities and water depths through culverts. Table 9.3 - CIRIA's Culvert, Screen and Outfall Manual *Table 9.3 Design criteria for culverts to enable fish to pass (from Armstrong et al, 2016)* **Parameter** / **Coarse fish roach, dace, chub etc smaller than 250 mm** / **Brown trout and coarse fish up to 250 mm and large coarse fish 250 – 500 mm** / **Sea trout, brown trout up to 250 – 500 mm and larger coarse fish greater than 500 mm** / **Salmon and large sea trout greater than 500 mm** Maximum flow velocity through the culvert (m/s) [a, b, c] – Length <20 m: 1.1 m/s / 1.25 m/s / 1.6 m/s / 2.5 m/s Maximum flow velocity through the culvert (m/s) [a, b, c] – Length 20 m to 30 m: 0.8 m/s / 1.0 m/s / 1.5 m/s / 2.0 m/s Maximum flow velocity through the culvert (m/s) [a, b, c] – Length >30 m: 0.5 m/s / 0.8 m/s / 1.25 m/s / 1.75 m/s Minimum water depth in culvert [d]: 100 mm / 100 mm / 150 mm / 300 mm Maximum water level drop at outlet [e]: 100 mm / 200 mm / 300 mm / 300 mm Minimum gap between screen bars: 100 mm / 100 mm trout 150 mm coarse fish / 150 mm / 200 mm **Notes** a Mean velocity of cross-section (there will be areas of lower and higher velocity). b The velocities for the shorter culverts approximate to the burst speed achievable by each species at 5°C, and the velocities for culverts > 30 m approximate to the cruising speed. c These velocities should not be exceeded at any flow within the passage design flow range. d Minimum depth acceptable at the lower end of the passage design flow range. This would mean an average maximum flow velocity of 0.8 m/s during the passage design flow range, with a minimum of depth of 100-150mm. Given the length of the culvert, and that the River Lyne is morphologically activity, we recommend a minimum natural bed depth of 300mm within the low flow channel.	1. A response has been provided against Item 8 with regard to the low flow channels and depths of natural beds to be provided. 2. This question is a duplicate of a question the Environment Agency raised at Deadline 6 and was responded to in Item 43 in the Applicants Response to Deadline 6 Submissions [REP7-017]. In the Deadline 6 response there was a commitment to update the Structures and Engineering Drawings and Sections [REP5-004], however, as agreed with the Environment Agency (in a meeting on 18 May 2021) these are no longer to be updated at this deadline, as there are several design approaches / options which could be utilised to provide the agreed depth of natural bed (through the provision of a notch, v-shaped bed or profiled natural bed) within the culvert. The final approach for the key culverts is only able to be confirmed during detailed design. However, this is sufficiently secured within the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8), as agreed with the Environment Agency.
A-W7 (Fenrother Burn)		
45	The design of the new channel should be based around the predicated discharges rather than existing conditions. The design objectives should maximise the ecological opportunities presented through the design of the new channel. The aim, as far as possible, accepting the local constraints, should be to re-establish the natural functioning of the channel, through naturalised flows, sediment transfer, patterns of erosion and deposition. Measures such as these will provide the most sustainable long term solutions delivering multiple benefits including climate resilience, sustainable flood management, improved biodiversity, reduced maintenance costs.	1. The Applicant has agreed the design objectives for this channel with the Environment Agency during a meeting held on 18 May 2021. Further information is provided in the response to Item 38 above.
A-W8 (North and South Fenrother Burn)		
46	Given the nature of the upstream catchment and the size of the existing culvert under the A1 (500mm diameter), the proposed culverts appear significantly over sized (1.5x1.25m twin box and 3x1.75m box). Could these 2 culverts be downsized given the limited scope for fish to be present the depth of any natural bed could be reduced to 150mm?	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017] (Item 47). 2. The response [below] refers to structure references used within The Culvert Mitigation Strategy [REP5-022] (and as updated at Deadline 8) and the Structures and Engineering Drawings and Sections [REP5-004].

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		3. Rectangular culverts have been incorporated within the design due to a shallow (structure reference 5.2) or significant (structure reference 5.3) depth of cover which would lead to uneven loading on the culvert from the surround. The size proposed is the smallest standard precast RC unit which can be used to meet the required performance criteria (flow conveyance and freeflow). The design of this culvert must also withstand the surcharge loading. Alternative piped solutions were considered using precast RC and High Density Polyethylene (HDPE) however this would require multiple pipes with a mass or reinforced concrete surround thus increasing the embodied carbon and introducing a larger length of culverted watercourse. 4. The parameters for this culvert were discussed with the Environment Agency at a meeting on 18 May 2021 and the Applicant understands that the position is now agreed
A-W9 (Causey Park Culvert)		
47	The photographs of the burn suggest flows sufficient to support fish, while the planform upstream and downstream of Causey Park suggest a morphologically the photographs of the burn suggest flows sufficient to support fish, while the planform upstream and downstream of Causey Park suggest a morphologically	1. The Applicant has agreed the design objectives for this channel with the Environment Agency during a meeting held on 18 May 2021. Further information is provided in the response to Item 38 above.
A-W10 (New Houses Farm Culvert)		
48	This action refers to the re-aligned channel and not the culverts. It needs to be re-worded to reflect this. Design principle for the new channel should align with principles outlined in A-W7 and A-B7. Given the Applicant's ambition to reduce the levels of embedded carbon, consideration should be given to the use of alternative materials such as polyethylene (high density) [HDPE] for this structures.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017]. 2. The wording has been updated within the Outline CEMP submitted at Deadline 7 [REP7-008 and 009] (and as updated at Deadline 8)to reflect that this applies to the realigned channel of the Tributary of Earsdon Burn and not the culverts. 3. The Applicant does not agree that the channel should be designed around the predicted discharges as this could result in a change to the flood regime. Notwithstanding this, consideration will be given to the potential to contain the flood flows within the channel during detailed design. This is secured via A-W10 in the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8). 4. A precast concrete pipe has been specified in this location as this culvert conveys flows beneath a landform resulting in a significant depth of cover and surcharge loading from farm traffic. An alternative HDPE culvert was considered but discounted due to anticipated ovalistation and deformation due to surcharge. 5. The parameters for this culvert were discussed with the Environment Agency at a meeting on 18 May 2021 and the Applicant understands that the position is now agreed
A-W12 (Earsdon Burn culvert)		
49	Given that this culvert is on a farm access track, it is unclear why the additional cost of a mammal ledge is considered necessary for this structure. This action also refers to comments made for A-W9. Unless the Applicant believes that a smaller culvert can be used as this structure is upstream of the New Houses Farm tributary, we recommend that this action is renumbered A-W11 to reflect the south to north trend.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017]. 2. As advised by the Environment Agency early on in the design process (within an email dated 14 June 2018), "*mammal passage and mitigation should be considered for all culverts and watercourses*…" The Applicant acknowledges that Earsdon Burn Culvert is located beneath a new access track and therefore the risk to otter as a

Ref. No.	Response:	Applicant's Response:
		result of vehicle collision on the track is significant reduced. However, given the proximity of Earsdon Burn Culvert to the Causey Park Culvert to the northwest, which passes beneath the new offline section of Part A, it was considered appropriate and beneficial to facilitate mammal passage through both culverts to maintain movement corridors beneath roads (either the farm track or A1). 3. This reasoning was explained to the Environment Agency during a meeting on 18 May 2021, during which the Agency acknowledged and accepted the justification for the approach. 4. The Applicant has renumbered A-W11 and A-W12 in the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) to ensure ease of reading and interpretation by all parties during the next phases of the Scheme as suggested by the Environment Agency.
A-W11 (Bockenfield Bridge/Culvert)		
50	We require justification for the need of scour protection, whether it can be designed out, and whether green or hybrid solutions can be used as an alternative to a hard engineered solution.	1. The Applicant provided a response to the Environment Agency's comment at Deadline 7 [REP7-017]. 2. The Applicant considers that this is a detailed design issue and is suitably secured via the update to S-W1, (b) of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) as discussed in Item 28 of this document.
51	It is unclear why the mitigation measures for the Burgham Culvert and the proposals for the riparian improvements to the Longdike are not included in the outline CEMP. For the Burgham Culvert it is recommended that an option to raise water levels above the lip of the downstream culvert are also included in the package of works to improve fish access. This will benefit species such as eel and lamprey, will broaden the window when migration is possible, and will be a more robust and long term solution.	1. The measures for the Longdike Burn are included in the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8) under A-B40 as identified by the Environment Agency in Item 55 below. Further detail has been added to Commitments A-B40, A-W5, A-W6, A-W7, A-W9 and AW-11 of the Outline CEMP updated at Deadline 8 following the conclusion of the discussion over the design for this watercourse with the Environment Agency following the meeting on 18 May 2021. 2. The only changes to the Burgham Culvert (10.1) are modifications to existing headwalls. The length of the culvert and its permeability to fish passage will not be adversely impacted by the Scheme. As such, no mitigation measures are required. The existing (unchanged) culvert outlet cannot be lowered to align with channel bed due to extent of engineering works that would be required. An improvement for fish passage is proposed within the culvert, by the replacement of the existing wooden baffles with more permanent structures to improve the lifespan of the feature and maintain fish passage in the long-term (longer lasting material). This improvement is secured by measure A-B9 of the Outline CEMP [REP7-008 and 009] (and as updated at Deadline 8).
A-B30		
52	This needs to be amended to reflect the comments made above.	1. As discussed in the response to Item 23 above, the Applicant has agreed the depth of the natural beds with the Environment Agency.
Actions A-B40		
53	We have not yet been presented with any justification for the suitability of these works and are wary about this being claimed as compensation without any evidence that these issues are	1. A response has been provided against Items 10 and 21, noting that the issues referred to by the Environment Agency are nutrient management and bankside

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	present within the proposed area or are in fact causing a degradation of the watercourse. We welcome that this action will be developed in partnership with the EA.	stabilisation. These measures are no longer proposed by the Applicant as outlined in the response to Item 8 of the Applicant's Responses to Deadline 6 Submissions [REP7-017].
54	It is noted that Action A-B40 makes reference to compensation for the direct loss of approximately 35m of the Longdike Burn as part of the Bockenfield Culvert (12) extension. Document 7.24.2 Applicant's Response to Deadline 5 and 5a.	1. A response has been provided against Item 2 above.
55	Submissions [REP6-040], Appendix iii-Indicative Longdike Burn Proposals makes reference to compensation measures such as 'riparian enhancements with native riparian tree planting, berm enhancement potential for planting with wetland tolerant and amphibious vegetation and aquatic macrophytes planting'. The outline CEMP makes reference to the inclusion of nutrient management measures to address adverse impacts of run-off from agricultural land and bankside stabilisation. However, there is no mention of measures of this nature in 7.24.2 Applicant's Response to Deadline 5 and 5a Submissions [REP6-040].	1. A response has been provided against Item 10 and 21. The issues referred to by the Environment Agency are nutrient management and bankside stabilisation. These measures are no longer proposed by the Applicant as outlined in the response to Item 8 of the Applicant's Responses to Deadline 6 Submissions [REP7-017];
Table 3-5 Environmental Statement Addendum – Stabilisation Works for Change Request		
REAC Ref SW-B2 & B3		
56	We welcome the commitment to restore the riverbed to pre-works comparable condition. However, we require the submission of information regarding how the baseline conditions will be established; how the restoration will take place; what the risks are and whether any aftercare/monitoring will be implemented.	1. A method statement has been prepared to respond to this request and is included within Appendix B of the updated Outline CEMP [REP7-008 and 009], submitted at Deadline 8.
57	This measure states it should provide suitable sheltering habitat for aquatic invertebrates and juvenile fish and naturally become vegetated over time. Although some revegetation may occur, very large rock armour as proposed will be a highly limiting factor for the development of bankside habitat and will vegetate far less than the existing, mostly natural banks present. As such, compensation should be provided and a commitment as such should be recorded within the outline CEMP. This comment is also applicable to REAC Ref SAW-B3.	1. The rock armour will comprise large boulders that will create voids and gaps, allowing natural deposition of sediment. This would allow for vegetation to naturally develop, as referred to within the ES Addenda (paragraph 8.9,7, Environmental Statement Addendum: Stabilisation Works for Change Request [REP4-063] and paragraph 7.9.9, Environmental Statement Addendum: Southern Access Works for Change Request [REP4-064]). 2. Whilst the Applicant has acknowledged that natural vegetation would occur within the impact assessments reported in the addenda, it remains that a loss of riverbank habitat is identified as a Moderate adverse (significant) effect to the SSSI. The Applicant therefore acknowledges that as a HPI and habitat of a SSSI, compensation should be provided for the loss of riverbank to the extent appropriate having regard to the impacts of the Scheme. The Applicant has explored opportunities for compensation for the loss of riverbank habitat through discussion with landowners. However, the Applicant has agreed with the EA that it is not practical for the Applicant to provide compensatory habitat on the River Coquet. Accordingly, the Applicant is in discussions with the Environment Agency to fund delivery of off-site mitigation by the Environment Agency. 3. The Outline CEMP will be updated to include compensation measures once a agreement the Environment Agency has been reached detailed with.

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REAC Ref SW-B4		
58	The rock armouring of the riverbanks will permanently fix the riverbed and banks, restricting and influencing the form and function of the river well past 125 year lifetime of the bridge. The proposed scour protection using large rock armour cannot replicate the heterogeneous and dynamic nature of the existing bank. Rivers are rarely stable for extended period's time. Over time the rock armour will vegetate up, however it is unlikely to be as diverse as the lost natural bank. As such, it is considered that compensation is required and a commitment as such should be recorded within the outline CEMP once or if agreed.	1. The Applicant indicates that elements of the comments raised by the Environment Agency here have been made in previous responses. As follows: • "The rock armouring of the riverbanks will permanently fix the riverbed and banks, restricting and influencing the form and function of the river well past 125 year lifetime of the bridge." was commented in the Environment Agency's Deadline 5 Submission [REP5-044]. The Applicant's Response to Deadline 5 and 5a Submissions[REP6-040], which is quoted below. 2. "Table 9-8 Chapter 9 Road Drainage and the Water Environment of the Environmental Statement Addendum: Stabilisation Works for Change Request [REP4-063] acknowledges that the change in materials from which the north bank is composed, would reduce the channel's ability to adjust. Paragraphs 9.10.40 and 9.10.41 set out that presence of bank protection is unlikely to alter future sediment supply to the reach, of which the north bank is not considered to be an important source of sediment. The impacts from the Stabilisation Works are local to the works and unlikely to affect the form or function of the river beyond the immediate locality of the works. The bank protection works are not considered to change the morphological behaviour of the reach, or the function as a sediment transfer zone. 3. The impacts on sediment regime, natural fluvial processes and morphology will be set out following analysis of the outputs from the hydraulic modelling. This will be reported and submitted to the Examination at Deadline 7 as the Environment Agency itself has helpfully acknowledged. 4. Should the structure (bridge) not plan to remain operational beyond the intended 120 year design life, then it would be decommissioned along with all other supporting elements of the scheme (rock armour etc.). However, it should also be noted that the assessment design year should be – as is normal – 15 years and not 125 years." • The Applicant therefore acknowledges that as a HPI and habitat of a SSSI, compensation should be provided for the loss of riverbank to the extent appropriate having regard to the impacts of the Scheme. The Applicant has explored opportunities for compensation for the loss of riverbank habitat through discussion with landowners However, the Applicant has agreed with the EA that it is not practical for the Applicant to provide compensatory habitat on the River Coquet. Accordingly, the Applicant is in discussions with the Environment Agency to fund delivery of off-site mitigation by the Environment Agency. .
REAC Ref SW-W5 / SAW-B7 / SAW-W5		
59	Chemical Dosing of silt laden water may be required due to the steep slopes, exposed soils and heavy construction traffic that will generate contaminated water during or after rainfall events. Settlement lagoons require a substantial area to allow sediments to settle, and often due to the chemical composition of the soils, finer particles may remain suspended. The area required for these ponds is unlikely to be available due to the minimal working area designed to reduce the	1. The Applicant will work with the Environment Agency to further develop the agreed approach prior to applying for the relevant permissions.

Ref. No.	Response:	Applicant's Response:
	ancient woodland loss. As such, lamella tanks and chemical dosing are likely to be required and the relevant permits and permissions from the EA and Natural England must be sought.	
REAC Ref SW-W2		
60	We welcome the commitment to minimise the extent of hard engineered erosion protection. It needs to be acknowledged, that while grey/green solutions may allow more diversity in the revegetation, it still fixes the river channel and bed to its current position. The bank protection measures in combination with the slope stabilisation will decouple the channel from the gorge sides, thereby preventing the supply of sediment to the channel. Flow and channel features will become less varied, thereby reducing the number and diversity of the species able to utilise the area.	1. The Applicant agrees that any bank protection fixes the bank in position. As described in Paragraph 8.10.40 of Chapter 8: Road Drainage and the Water Environment (Environmental Statement Addendum: South Access Works for Change Request [REP4-064]), the banks in the vicinity of the proposed works are not considered to be an important source of sediment for the channel. Similarly, any impacts to natural fluvial processes would be localised to the areas of the permanent works. The outcomes of hydromorphological assessments presented in the ES Addenda (Environmental Statement Addendum: Stabilisation Works for Change Request [REP4-063] and Environmental Statement Addendum: Southern Access Works for Change Request [REP4-064]). has been validated in the River Coquet Fluvial Geomorphology Assessment [REP7-003] submitted at Deadline 7 of the Examination. The Scheme in Operation scenario has indicated the extent of anticipated changes are confined to the margins of the channel within the extent of the work and immediately downstream. The inclusion of rock armour is likely to have a localised impact of limited magnitude on geomorphological dynamics across most of the channel, with some minor limited changes in geomorphological dynamics at the channel margins due to the changes in roughness that the bank protection may introduce. This is most notable on the left bank rock armour downstream of the bank protection where there is a slightly increased risk of erosion. The effect on biotopes is anticipated to be negligible in magnitude at normal flow levels with any localised changes occurring at the immediate boundary with the rock armour. 2. The Applicant does not therefore agree that the consequences of the bank protection have a material impact.
61	The proposals will also influence channel response and development beyond the footprint of the works (both up and downstream), thereby extending the potential range of deterioration. By restricting or preventing these infrequent, yet clearly active slope processes, and by preventing the river from responding to them, there will be a progressive, long term deterioration of the channel, and the species it supports. This risk still needs to be assessed, and if the impact is deemed to be locally significant, a commitment to either mitigate or compensate needs to be recorded in the outline CEMP.	1. This comment is a replica of previous comments raised by the Environment Agency Deadline 5 Submission [REP5-044]. The Applicant's Response to Deadline 5 and 5a Submissions [REP6-040], which is quoted below. 2. Ref No. 36 "The Applicant does not agree that the proposals would impact the channel response beyond the footprint of the works and extend the potential range of deterioration for the reasons set out above. The bank protection works are not considered to change the morphological behaviour of the reach, or the function as a sediment transfer zone." 3. Ref No. 37 "From the responses given above (31, 33 and 35) the Applicant acknowledges that there have been a number of valley-side failures within the gorge which has delivered sediment to the river. This situation is set out in the baseline description of the Study Area presented in Appendix 10.7 Part A Geomorphology Assessment of the ES [APP-260]. 4. Specifically, at the location of the proposed works on the north bank, exists a wide, relatively gently sloping area which adds significant lag to the input of any sediment from failures of the upper valley side to the channel. On the south bank, the primary

Ref. No.	Response:	Applicant's Response:
		route for delivery of material from the valley side to the river is rockfall. Some rockfall will be arrested by the presence of trees and some will make it to the river. 5. At the specific location for the north bank stabilisation which covers a very short extent of the gorge, while slips have occurred in the past under post-glacial climatic conditions the area is unlikely to naturally supply sediment or alter the planform of the river through failure during the design life of the bridge. However, there is a risk of reactivation of instability affecting the bridge at this location. 6. For these reasons, the Applicant does not agree that these processes being affected will lead to a progressive, long-term deterioration of the channel and the species it supports." 7. Since this submission, the Applicant has provided the full results of the fluvial geomorphology assessment as previously committed at Deadline 7 of the Examination. 8. As reported in the Paragraph 8.4.5. of the River Coquet Fluvial Geomorphology Assessment [REP7-003], the Scheme in Operation scenario has indicated the extent of anticipated changes are as reported in 6.38 Environmental Statement Addendum: Stabilisation Works for Change Request [REP4-063] and 6.40 Environmental Statement Addendum: Southern Access Works for Change Request [REP4-064]. Notable changes are confined to the margins of the channel within the extent of the work and immediately downstream. The magnitude impact on the sediment regime and natural fluvial processes are assessed to be negligible, with any long-term effects very minor and localised to the area of permanent works. The magnitude of impact on channel morphology is considered minor adverse, as some bank and near bank features would be lost within the footprint of works. However, impacts are small and localised to the channel margins and limited to the extent of the scour protection. Therefore, the Applicant considers the risk to have been adequately assessed. 9. The Applicant acknowledges that as a HPI and habitat of a SSSI, compensation should be provided for the loss of riverbank to the extent appropriate having regard to the impacts of the Scheme. The Applicant has explored opportunities for compensation for the loss of riverbank habitat through discussion with landowners However, the Applicant has agreed with the EA that it is not practical for the Applicant to provide compensatory habitat on the River Coquet. Accordingly, the Applicant is in discussions with the Environment Agency to fund delivery of off-site mitigation by the Environment Agency.
REAC Ref SW-W3, SAW-W1 & W2		
62	We welcome the design and mitigation measures associated with the stabilisation works. It needs to be acknowledged, that while grey/green solutions may allow more diversity in the revegetation, it still fixes the river channel and bed to its current position.	1. The Applicant agrees that any bank protection fixes the channel in position. 2. As reported in Section 7.4 of the River Coquet Fluvial Geomorphology Assessment [REP7-003], the Scheme in Operation scenario indicates that changes in stream power compared to the baseline is limited to the margins of the channel in location of the proposed works. On the left bank (north bank) the results suggest a decrease in stream power where the bank protection is constructed with an increase in stream power immediately downstream. These areas of both increases and decreases occur in areas where the stream power is very low (in both baseline and operation

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		scenarios (<35W/m2), under the 50% AEP (2-year) event). On the right bank (south bank), increases in stream power compared to the baseline occur very locally to the south bank pier rock armour. 3. No changes in stream power under the 50% AEP (2-year) event and 2% AEP (50-year) event compared to the baseline are observed across the channel, indicating no impacts to the bed of the channel as a result of the presence in bank protection. Under the 0.5% AEP (200-year) event, there is a zone of increased stream power (approximately 10%) which extends across the channel at the upstream end of the works (as shown in Figure 24 Appendix C, 6.47 River Coquet Fluvial Geomorphology Assessment). However, as bedrock is present it is unlikely to be affected by the changes in stream power. No changes in stream power are anticipated across the channel within the remainder of the works area or downstream of the proposed bank protection area. 4. The Applicant therefore concludes that whilst the presence of bank protection fixes the bank in position, its presence does not have an influence on the channel bed when compared to the baseline situation.
REAC Ref SW-W4 & SAW-W3		
63	We welcome the commitment to protect and when necessary map and reinstate in channel sedimentary features.	1. Noted. No response required.
REAC Ref SW-W7 & SAW-W6		
64	We welcome the proposals to use a suitably qualified clerk of works to monitor and record bed and bank changes during the construction phase. We would request that there is a subsequent action/measure within the outline CEMP, if the monitoring highlights channel changes, out with those predicted in the geomorphology assessment.	1. A method statement has been prepared which addresses the comments made at Ref No. 56 and 68, as included within Appendix B of the updated Outline CEMP [REP7-008 and 009], submitted at Deadline 8. Included in this is the presence of an appropriately qualified geomorphologist who will supervise the works and inspect the activities to confirm the actions and principles set out in the method statement are being followed.
REAC Ref SAW-B2 & B3		
65	We support the commitment to minimise the extent of hard engineered erosion protection. It needs to be acknowledged, that while grey/green solutions may allow more diversity in the revegetation, it still fixes the river channel and bed to its current position. The bank protection measures in combination with the slope stabilisation will decouple the channel from the gorge sides, thereby preventing the supply of sediment to the channel. Flow and channel features will become less varied, thereby reducing the number and diversity of the species able to utilise the area. The proposals will also influence channel response and development beyond the footprint of the works (both up and downstream), thereby extending the potential range of deterioration.	1. Refer to responses 60 and 61 above.
66	By restricting or preventing these infrequent, yet clearly active slope processes, and by preventing the river from responding to them, there will be a progressive, long term deterioration	1. Refer to responses 60 and 61 above. 2. The Applicant therefore acknowledges that as a HPI and habitat of a SSSI, compensation should be provided for the loss of riverbank to the extent appropriate

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	of the channel, and the species it supports. This risk still needs to be assessed, and if the impact is deemed to be locally significant, a commitment to either mitigate or compensate needs to be recorded in the outline CEMP.	having regard to the impacts of the Scheme. The Applicant has explored opportunities for compensation for the loss of riverbank habitat through discussion with landowners However, the Applicant has agreed with the EA that it is not practical for the Applicant to provide compensatory habitat on the River Coquet. Accordingly, the Applicant is in discussions with the Environment Agency to fund delivery of off-site mitigation by the Environment Agency.
REAC Ref SAW-W1		
67	Although some revegetation may occur, very large rock armour as proposed will be a highly limiting factor for the development of bankside habitat and will vegetate far less than the existing, mostly natural banks present. Therefore, compensation is required and a commitment as such should be recorded within the outline CEMP.	1. The rock armour will comprise large boulders that will create voids and gaps, allowing natural deposition of sediment. This would allow for vegetation to naturally develop, as referred to within the ES Addenda (paragraph 8.9,7, Environmental Statement Addendum: Stabilisation Works for Change Request [REP4-063] and paragraph 7.9.9, Environmental Statement Addendum: Southern Access Works for Change Request [REP4-064]). 2. Whilst the Applicant has acknowledged that natural vegetation would occur within the impact assessments reported in the addenda, it remains that a loss of riverbank habitat is identified as a Moderate adverse (significant) effect to the SSSI. The Applicant therefore acknowledges that as a HPI and habitat of a SSSI, compensation should be provided for the loss of riverbank to the extent appropriate having regard to the impacts of the Scheme. The Applicant has explored opportunities for compensation for the loss of riverbank habitat through discussion with landowners However, the Applicant has agreed with the EA that it is not practical for the Applicant to provide compensatory habitat on the River Coquet. Accordingly, the Applicant is in discussions with the Environment Agency to fund delivery of off-site mitigation by the Environment Agency.
REAC Ref SAW-B6		
68	We request that similar measures/actions regarding the mapping and reinstatement of the riverbed are applied to the "southern access works" as are being applied to the "slope stabilisation works".	1. A method statement has been prepared to respond to this request, as included within Appendix B of the Outline CEMP [REP7-008 and 009], submitted at Deadline 8.
Deadline 6 Submission - 7.26.4 Applicant's Written Summaries of Oral Submissions to Hearings - Appendix F - Otter Position Statement [REP6-048]		
69	Section 1.3.7 states that further possible evidence of otter adjacent to the study area for Part B was provided by the EA at a meeting on 30 April. The EA provided pictures and grid references of 7 confirmed spraining locations within 200m of the scheme were shared with the Applicant.	1. These comments are a repeat of reference 6 above. For ease, the response to reference 6 is replicated below. 2. The Applicant confirms that the Environment Agency provided recent evidence of otter (spraint) within 200m of Part B along Shipperton Burn during a meeting on 30 April 2021. 3. The Applicant has updated their position regarding otter on Part B, which is detailed in the Applicant's response to the Examiner's written questions 3, BIO.3.1, issued at Deadline 8. The response provided to BIO.3.1 represents a joint response by the Applicant, Environment Agency and Northumberland County Council. Within the response to BIO.3.1, the Applicant has confirmed that they have re-evaluated the
70	We await further details of the precise reason why a mammal shelf cannot be fitted within the culvert at Shipperton Burn, and would urge the Applicant to explore all options and solutions to barriers inhibiting installation. Shipperton Burn provides a good habitat for otters. However, the culvert is a fully concrete structure with a smooth base with a relatively steep incline and as a result, water velocities were relatively high. As such, it is anticipated that given the uniform and smooth channel base, in high flows the culvert would be impassable to otter. In light of the clear	

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	evidence of use by otters and poorly designed culvert, we request the Applicant updates their Otter Position Statement and provides detailed justification regarding why mammal shelves cannot be fitted within the Shipperton Burn culvert.	position in light of the new evidence and now accepts that otter are present within the Order limits of Part B. 4. Regarding the matter of installing a mammal shelf retrospectively within the existing Shipperton Burn Culvert (and the proposed extension to this culvert), the Applicant provided a response on this matter at Deadline 7 (Reference 69, Table 1-1 Environment Agency, Applicant's Responses to Deadline 6 Submissions [REP7-017]). "*The Shipperton Burn Culvert would be extended as part of the construction of Part B, with the extension being a mirrored design of the existing culvert. The Applicant has explored the feasibility of retrofitting a* 5. mammal shelf into the Shipperton Burn Culvert (including within the extension). Whilst it is feasible to consider a shelf in the extension, should a precast culvert design be used, the culvert dimensions (1.2m height by 2.0m width) prevent the retrospective installation of a mammal shelf within the existing culvert. This is not possible due to the lack of physical space for a person to install the shelf and also for the lack of physical space for the shelf and allowance of headroom. Further, the Applicant's engineers confirm that, as designers, under construction (Design and Management) (CDM) Regulations, there is a duty to eliminate hazards and reduce risks. In this case the confined space hazard can be avoided by not entering the culvert." 6. The Applicant confirmed this position with the Environment Agency during a call on 18 May 2021. The position was acknowledged during the meeting and subsequently agreed by the Environment Agency by email on 19 May 2021. This engagement is captured within the statement of common ground issued at Deadline 8. 7. The Applicant has proposed otter fencing at Shipperton Burn (in addition to three other locations along Part B; Western Tributary of Kittycarter Burn, White House Burn and Denwick Burn) to direct otter passage through the culvert beneath Part B. The Applicant has discussed and agreed the proposed location and length of fencing with the Environment Agency. The proposed fencing is captured and secured by Commitment ExA: B-B100 of the Outline CEMP [REP7-008 and 009] updated at Deadline 8 and presented on an updated Landscape Mitigation Masterplan Part B [REP6-018] submitted at Deadline 8. 8. The Applicant has agreed with both the Environment Agency and Northumberland County Council that the proposed mitigation is sufficient to address their concerns regarding otter for Part B. As such, the assessment of, and proposed mitigation for, otter is agreed for the Scheme.
Deadline 6 Submission - 7.6C Statement of Common Ground with Environment Agency - Rev 2 [REP6-032]		
71	We are working with the Applicant to address the issues outlined in this letter and in our previous correspondence.	1. Noted. The Applicant remains in discussions with the Environment Agency to resolve the outstanding issues.
Update on Hydraulic Model Review		
72	The EA completed its review of the stage 1 hydraulic model. The hydraulic model is considered to be largely appropriate. However, we have identified some minor points for consideration and requested clarity on a few issues. We have received some updates in the regards to issues	1. The Applicant thanks the Environment Agency for their review of the stage 1 (baseline) hydraulic model and the associated reporting. Comments were received by the Applicant on 7 May, with responses return to the Environment Agency on 14

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	raised from the Applicant, and these are currently under review. We are also in the process of reviewing the stage 2 hydraulic model (post development modelling).	May. Where possible, comments were addressed within the River Coquet Hydraulic Modelling Report for Change Request [REP7-006]. 2. The primary points raised by the EA in their review and the Applicant's responses, are as follows: • Evaluate the form loss values for the Felton Old Bridge and New Bridges, as they appear to be quite low. • Applicant's response: the guidance used (Joseph N. Bradley, Hydraulics of Bridge Waterways, U.S. Bureau of Public Roads, 1960) includes form loss values for a number of pier shapes with 0.38 being a high value. This value has been distributed over the footprint of the bridge resulting in a value 0.0012/m. These bridges are also not within the area of interest. • Undertake sensitivity testing on roughness and downstream boundary conditions (±20% on N and slope) and add the findings to the report. • Applicant's response: sensitivity testing and associated reporting was completed and issued to the EA on 10 May and is included within the River Coquet Hydraulic Modelling Report for Change Request [REP7-006]. • Add some detail to the report on how the outputs compare against anecdotal historic evidence (historic flood extents). • Applicant's response: commentary will be included in an update to the River Coquet Hydraulic Modelling Report for Change Request [REP7-006] and submitted to the examination at Deadline 8a, once Environment Agency comments on the stage 2 (Scheme) hydraulic model and associated reporting are received. • Consider adding photographs of key structures (A1, Old and New Felton Bridges) to the model report as this would aid in the review of the flow constriction layers and adopted form loss values. • Applicant's response: photographs of key structures will be included in an update to the River Coquet Hydraulic Modelling Report for Change Request [REP7-006] and submitted to the examination at Deadline 8a, once Environment Agency comments on the stage 2 (Scheme) hydraulic model and associated reporting are received. 3. Comments on the stage 2 (Scheme) hydraulic model and associated reporting are awaited. Once received, where appropriate, the River Coquet Hydraulic Modelling Report for Change Request [REP7-006] will be updated to address these comments, before being submitted to the examination at Deadline 8a.

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