
The Cambridge South East Transport Order

Transport And Works Act 1992

Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006

Environmental Statement Addendum

Document Reference	CD-CR-03
Revision Number	00
Applicant	Cambridgeshire County Council
Date	October 2026

AtkinsRéalis



The Cambridge South East Transport Phase 2

Transport and Works Act Order

01 October 2026

ENVIRONMENTAL STATEMENT ADDENDUM

AtkinsRéalis





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This document has 30 pages including the cover.

Document history

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 0	Draft	JB	RS	DP	EK	04/06/2026
Rev 1	Draft	JB	RS	DP	EK	26/06/2026
Rev 2	Final	Multiple	RS	DP	EK	01/10/2026



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1. Introduction

1.1 Purpose of the Environmental Statement Addendum

- 1.1.1 This Environmental Statement (ES) Addendum has been prepared to support three proposed design changes to the Cambridge South East Transport Phase 2 Scheme (herein referred to as the Scheme) in respect of an application for an Order under the Transport and Works Act 1992. The original ES (CD1-10.02) and associated appendices (CD1-10.03 to CD1-10.58 inclusive) provide a comprehensive assessment of the likely significant environmental effects of the Scheme in accordance with The Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006 (as amended) (the TWA Rules).
- 1.1.2 This ES Addendum provides an update to the original ES and associated appendices (CD1-10.03 to CD1-10.58 inclusive), taking into account three proposed design changes.

1.2 Legal context

- 1.2.1 The Scheme is being promoted under the Transport and Works Act 1992 (TWA) and is therefore subject to the requirements of the TWA Rules. The Environmental Impact Assessment (EIA) for the Scheme has been undertaken in accordance with Rule 7A of the TWA Rules, which requires that an ES is prepared.
- 1.2.2 In accordance with section 13B of the TWA, before determining an application for a Transport and Works Act Order (TWAO) for development requiring an EIA, the Secretary of State must consider the EIA information and must reach a reasoned conclusion about the likely significant effects of the proposed works or project on the environment. The reasoned conclusion must be taken into account in determining the application and when doing so, the Secretary of State must be satisfied that the reasoned conclusion is up to date.
- 1.2.3 In response to ongoing consultation and engagement with affected landowners and utilities, the Applicant proposes three changes to the design of the Scheme. This ES Addendum has been produced to provide the relevant additional environmental information required in order for the Secretary of State to come to a reasoned conclusion about the likely significant effects of the Scheme as amended. This ES Addendum also provides additional information on the effects of dewatering during construction which were not assessed in the original ES.

1.3 Additional environmental information

- 1.3.1 Three design changes are proposed to the Scheme as follows:
- Change request 1: Extension of the Order limits to allow (i) a short diversion of the existing Pipeline where the busway crosses the Pipeline and (ii) protective works over the existing Pipeline running alongside the proposed Travel Hub, as well as amendments to the layout of the proposed Travel Hub and reconfiguration of the highway arrangements at the A1307 Cambridge Road to provide a signalised junction in place of a roundabout (within Work Nos. 9, 10 and 11)
 - Change request 2: Reduction in the Order limits, realignment of the cycle track and private means of access and amendments to the ecology ponds near Hobsons Conduit (within Work No.3)
 - Change request 3: Reduction of the Order Limits in the Stapleford area (within Work Nos. 6 and 7)
- 1.3.2 In addition to the above three changes, new information is provided on the construction of the Hobson's Conduit crossing, and the two River Granta crossings which result in potential effects that were not assessed in the original ES due to groundwater abstraction.
- 1.3.3 This ES Addendum provides, a description of each of the changes, and an assessment of the potential likely significant effects. The ES Addendum is set out as follows:
- Chapter 2 – Change request 1 reasons, description, and consideration of environmental impacts
 - Chapter 3 – Change request 2 reasons, description, and consideration of environmental impacts
 - Chapter 4 – Change request 3 reasons, description, and consideration of environmental impacts
 - Chapter 5 – Assessment of the effect of groundwater abstraction during the construction of the Hobson's Conduit and River Granta crossings.
 - Chapter 6 – Conclusions

2. Change request 1

2.1 Reason for the change

- 2.1.1 Following submission of the TWAO application for the Scheme, National Gas Transmission (NGT) made a representation in respect of possible impact to the Feeder Main FM03 – GT Wilbraham to Whitwell gas pipeline that would be crossed by the Scheme at two locations, approximately 255 m from the Travel Hub. Figure 2.1 shows the location of the gas pipeline in relation to the Scheme.
- 2.1.2 The representation raised concerns in respect of:
- The risk to the gas pipeline from the Scheme
 - The risk of the gas pipeline to people using or working at the Travel Hub in the event of a failure of the gas pipeline
- 2.1.3 Following engagement with NGT, the Applicant seeks to amend the Scheme to incorporate certain design changes to mitigate these risks, as presented in section 2.2. below.

2.2 Description of the change

Reducing the risk to the gas pipeline from the Scheme

- 2.2.1 To mitigate the risk to the gas pipeline from the Scheme, two minor design changes been identified, one at each of the gas pipeline crossing points. The first crossing point would be by the busway at Chainage 8950. At this location, it is proposed to divert a short length of the existing gas pipeline which would be under the busway. The diversion of the pipeline would be undertaken in accordance with outage requirements during the construction enabling works. This would enable a reinforced section of pipeline to be installed in the area which will be crossed by the busway. The works would protect the pipeline from damage during the construction and operation of the busway.
- 2.2.2 This short diversion would require the excavation of a new trench, parallel to the existing pipeline, and connecting to the existing pipeline at either end. A new section of gas pipeline would be installed in the trench and connected at each end to the existing gas pipeline. Once the connection has been established, the open trench would be back filled ready for the main construction works to commence. The redundant section of existing gas pipeline would either remain in situ or be removed.
- 2.2.3 The works to undertake the gas pipeline diversion require additional land beyond the original Order Limits. Permanent rights to operate and maintain the stretch of diverted pipeline in its new location will be required, along with an additional working area which will be required temporarily during construction. The required area of additional land is shown on the Amended Proposed Site Section Sheets (2) [CD-CR.5]
- 2.2.4 The second location where the gas pipeline would be crossed by the Scheme is at the A1307, where the proposed new junction to provide access to the Travel Hub is located. The original junction design was for a three-armed roundabout, and the north-western arm of the junction would have required the widening of the A1307 at the location where the existing highway crosses the gas pipeline. The original junction design is shown on page 38 of the ES Appendix 2.2 LEMP [CD1-10.05].
- 2.2.5 It is proposed to change the three-armed roundabout junction to a signalised T-junction as shown in on the Amended Proposed Site Section Sheets (2) [CD-CR.5]. This amended junction layout avoids the requirement to widen the existing A1307 at the location of the gas pipeline, where the pipeline is already protected from damage, and therefore eliminates the risk of construction works impacting the gas pipeline.

Reducing The Risk of the Gas Pipeline to People Using or Working at the Travel Hub in the Event of a Failure of the Gas Pipeline

- 2.2.6 The risk of failure of the gas pipeline is assessed by considering the acceptability of certain activities within distance bands from the gas pipeline, based on guidance provided by the Institution of Gas Engineers and Managers. The assessment is based on multiples of a defined Building Proximity Distance (BPM). For the FM03 gas pipeline the BPM is 78 m which is multiplied by 3 based on the population density at the Travel Hub as a “medium development”. This results in an exclusion zone of 234 m for facilities where people are likely to congregate for periods of time. At approximately 200 m from the gas pipeline, the proximity of the Travel Hub building and resulting risk is not acceptable to NGT.
- 2.2.7 To resolve this risk, the Travel Hub has been redesigned to move the waiting area approximately 255 m from the gas pipeline and beyond the 234 m exclusion zone. The original design is shown on pages 37 and 38 of the ES Appendix 2.2 LEMP [CD1-10.05]. The layout of the reconfigured Travel Hub is shown on the Amended Proposed Site Section Sheets (2) [CD-CR.5]. This does not require any additional land outside of the existing Order limits. Only the configuration of the Travel Hub has changed. Other relevant design parameters, including the number of parking spaces, capacity, size of the building remain the same. The landscape design has been updated to accommodate the reconfigured layout but the mitigation principles for landscape and ecological impacts that were embedded into the design are retained. This includes screening vegetation, and areas of habitat that were included in the original design. This does, however, create the opportunity to reduce the loss of mature trees which was a concern raised by GCSP.
- 2.2.8 In addition to the Travel Hub redesign, protective matting will be placed over the top of the pipeline between the planned diversion, described above, and the A1307 to the north, and the River Granta to the south. The works will require the excavation of a trench to uncover the existing pipeline, laying the protective matting on top of the exposed pipeline, and then backfilling the trench. The protective matting will only be required where the pipeline passes through the fields and is not required where the pipeline passes underneath the two hedgerows in this location. The protective matting works would also require a short temporary diversion of footpath 12/4 during construction works.

2.3 Consideration of environmental effects

- 2.3.1 The gas pipeline diversion and protective matting works would be undertaken as part of the enabling works and would extend the programme for this phase of construction works. As such they were not considered in the original ES [CD1-10.02] and warrant additional consideration as to whether likely significant effects would arise.
- 2.3.2 The gas pipeline is located beneath agricultural land and crosses a public footpath and two hedgerows. The nearest residential receptor is located approximately 380 m to the east on Newmarket Road. An assessment of the likely significant effects resulting from the gas pipeline diversion is provided in Table 2.1. Impacts are limited to the construction phase, as once the works are complete, the gas pipeline will continue to operate as per the baseline situation.
- 2.3.3 The Travel Hub reconfiguration would not change the conclusions of the original ES [CD1-10.02]. The quantum of development and key parameters that were assessed have not changed as a result of the reconfigured layout. Key mitigation including ecology ponds, compensatory drainage ditches, and screening vegetation are all retained within the reconfigured layout.
- 2.3.4 No additional environmental effects or mitigation beyond that already identified in the original ES [CD1-10.02] have been identified for Change request 1.

Table 2.1 Assessment of possible environmental effects from Change request 1

Aspect	Potential environmental effect
Air quality	<p>The works are located in an agricultural field with no sensitive dust receptors nearby. The nearest residential property is located on the opposite side of the A11, along Newmarket Road approximately 380 m from the proposed works. Habitats that could be impacted by the works include a block of woodland between the gas pipeline and the Travel Hub. Impacts to this habitat from dust has already been assessed in Chapter 10 of the ES, and the works would not result in any additional impact. Mitigation for dust is already set out in the CEMP [CD1-10.08], and no further mitigation is required to ensure that there would be no significant effects.</p> <p>Combustion emissions from construction plant and traffic would be unlikely to generate any significant adverse effects given the scale of works required, and the lack of any receptors in the immediate vicinity of the proposed works.</p>
Noise and vibration	<p>The nearest noise sensitive receptor is located on the opposite side of the A11, along Newmarket Road approximately 380 m from the proposed works, further than the 300 m study area for construction noise. As such construction noise would not result in a significant effect. There would be a small increase in baseline noise emissions from construction plant and traffic in the area but this would not result in a change in the assessment conclusion set out in Chapter 7 of the ES, that there would be less than a 1 dB increase in noise and no significant effect. There are no noise sensitive receptors in the vicinity of the proposed works so there would be no effect from any noise increase. The small increase in construction traffic would not result in a significant change to road traffic noise.</p> <p>Excavation of the trenches for the existing and new pipelines could cause vibration. There are no vibration sensitive receptors within the 100 m study area for construction vibration so there would be no effect.</p>
Water environment	<p>The nearest surface water body is the River Granta located adjacent to the proposed works to install protective matting over the pipeline. Potential impacts include sediment laden runoff from bare earth caused by the excavation of the trenches and accidental leaks and spills of fuels from construction plant. Pollution impacts to the River Granta have already been assessed in the ES where the busway would cross the watercourse, The proposed pipeline protective works would not increase the impact already assessed in Chapter 8 of the ES. Mitigation for this impact has already been set out in the ES and secured within the CEMP. Relevant mitigation already identified in the ES includes:</p> <ul style="list-style-type: none"> ▪ WE2 Implementation of best practice measures outlined in the draft CoCP and draft CEMP ▪ WE4 Adherence to pollution prevention guidance ▪ WE5 Safe storage of fuel and oil on Site, and measures to minimise leaks and drips ▪ WE9 Safe storage of chemicals and hazardous substances <p>Most of the proposed works are located in Flood Zone 1 which is land assessed as having a low probability of flooding (0.1% annual probability), but works close to the River Granta would be located in Flood Zone 3. Works are anticipated to take approximately 1 to 2 days to complete, and the contractor would not undertake the works if the River Granta was in flood or at risk of being in flood. The proposed works would not result in any change to runoff rates nor increase flood risk to third party land. There would be no significant effect to or from flooding.</p>
Geology and soils	<p>It is anticipated that the works would require relatively shallow excavations for the pipeline trenches, approximately 2.6 m in depth. There are no known sources of contamination in the area so the works would not create a new contaminant pathway and there would be no impact. The CEMP (CD1.10-08) already identifies the mitigation measures required to ensure that significant effects would not arise.</p> <p>Agricultural Land Classification (ALC) surveys indicate that soils in the location of the pipeline diversion are grades 2, 3a, and 3b. Grades 2 and 3a constitute Best and Most Versatile. The proposed pipeline works would result in an increased loss of approximately 0.3 ha of BMV land beyond that reported in the original ES, resulting in a total loss 31.6 ha which has already been assessed as significant in the ES. An additional 1.3 ha of land would be required for the temporary works but as these are very short duration lasting 1 or 2 days, there would be no significant effect. Soils would be retained and managed to ensure that quality is not impacted. Mitigation required to minimise impacts is set out in the CSET2 Scheme's Soils Management Strategy.</p>
Biodiversity	<p>The proposed works are located in an arable field with low biodiversity value and of limited value to any protected species. The two hedgerows which are crossed by the pipeline would be maintained and protected as per the other retained vegetation across the Site. Mitigation already identified in the ES would ensure these habitats are not impacted. The relevant mitigation is BD3 Retention and protection of existing vegetation using protective barriers. The detail of this mitigation is set out on page 177 of the original ES [CD1-10.02]. Minor impacts from noise disturbance to the habitat or the species in the woodland close to the proposed works has already been assessed in the ES, and the impact would be no worse as a result of the proposed pipeline works.</p>

Aspect	Potential environmental effect
Landscape and visual	<p>The proposed works would be located in the Granta Valley Landscape Character Area (LCA) which has been assessed as being of medium sensitivity. The small scale of the proposed works, which would affect a very small part of the overall LCA would not result in significant adverse effects, so the original findings of the ES remain valid.</p> <p>Construction works would appear in the views of users of the public footpath which bisects the Travel Hub (representative Viewpoint 30). Construction works would be relatively minor, temporary, and reversible. Changes to views be in the context of the other construction works associated with the busway and Travel Hub and would not result in significant adverse effects.</p> <p>The change in the Travel Hub design would have broadly comparable landscape and visual impacts compared to the Scheme design assessed in the original ES. The shift of hard infrastructure including the building, and areas of hard standing closer to the A11 slightly reduces the impact on landscape character by minimising intrusion into open arable areas and increasing the amount of landscape buffer planting between the Travel Hub and fields beyond the Order Limits. The updated landscape design also retains the important tree AT025 which GCSP had specifically requested to be retained.</p>
Historic environment	<p>There is known archaeology present within the vicinity of the proposed works. Any archaeology that could be impacted by the works are likely to have already been damaged or lost as a result of the construction of the original pipeline. Further damage could occur but the presence of an archaeological watching brief and the allowance of sufficient time within the construction programme to address any discovered archaeology would be sufficient to mitigate possible effects. Consultation with the County Archaeologist has confirmed that this would be an acceptable approach and that no significant effects are likely.</p> <p>. The Babraham Conservation Area is approximately 300 m from the nearest point of the proposed gas pipeline works. Construction works are for a short duration, small in scale, temporary and reversible and the rural setting of the Conservation Area would be preserved. The negligible impact would result in a slight adverse and not significant effect, as reported in Chapter 12 of the ES.</p>
Population and human health	<p>There would need to be a short temporary diversion for footpath 12/4 during construction. The Contractor would need to determine this at the detailed design stage, but it is envisaged that the diversion could be accommodated within the Order Limits and would be a few tens of metres. The diversion would only be required for the duration of the construction works. The diversion is unlikely to discourage users of the footpath from continuing to use it so there would not be a significant effect. There would be no other impacts to population and human health receptors.</p>
Traffic and transport	<p>The amended junction layout would perform in a broadly similar way to the original roundabout junction, and would require similar time, materials, and construction traffic to build. There would be no change to traffic and transport related effects beyond those reported in the original ES (CD1-10.02).</p>
Climate vulnerability	<p>The duration of the construction phase would be less than a year long. Climate is not expected to change significantly in such a short time period and there would be no significant effects. Proposed works would be designed to the relevant standards to ensure resilience to future climate change.</p>
Greenhouse gas emissions	<p>There would be a small increase in greenhouse emissions due to the embedded carbon in the materials used during construction and the emissions from construction traffic and plant. This would be a negligible effect and would be considered unlikely to have a material impact on the UK Government from meeting its carbon reduction plan targets.</p>
Waste and resources	<p>A small amount of waste would be anticipated to be produced during construction. There would be a cut and fill balance as excavated material would be used to back fill the trench. The waste hierarchy would be adhered to and most of the waste is anticipated to be recyclable. There would not be a significant loss of landfill void capacity within the region.</p> <p>A small amount of materials will be used for the new pipeline. This would not be a significant effect. The proposed works are located in a Safeguarded Mineral Resource Area for chalk, and sand and gravels. The additional land take is 0.3 ha which would not result in a significant loss of the extensive Safeguarded Mineral Resource Areas.</p>
Cumulative effects	<p>No significant effects are anticipated, and minor impacts can be easily mitigated through standard best practice measures that would be set out in the CEMP. As the proposed works are of limited scale and duration, are temporary and reversible, any minor and non-significant effects would not result in cumulative effects with other projects. No individual receptors would be impacted by the proposed works through different environmental aspects, so there would be no in-combination effects.</p>

3. Change request 2

3.1 Reason for the change

- 3.1.1
- Following submission of the TWAO application, the Applicant has continued to negotiate with affected landowners to seek voluntary agreement on the acquisition of the land within the Order Limits. As a result of this, it has been agreed that the Order Limits will be reduced for the parcel of land immediately south of Francis Crick Avenue which land is no longer required for the delivery of the Scheme.
- 1.1.1
- In addition, ongoing engagement with the Hobson's Conduit Trust (HCT) has resulted in changes to the Scheme in the vicinity of Hobson's Conduit and Nine Wells to minimise the following environmental effects:
 - Reducing shading of aquatic habitats in Hobson's Conduit;
 - Minimising the risk of disrupting groundwater flows; and
 - Minimising the risk of water quality impacts.

3.2 Description of the change

Reduced Order Limits

- 3.2.1
- To enable a reduction in the amount of land required immediately south of Francis Crick Avenue, the two proposed Ecological Ponds 1 and 2 have been relocated from their original location to the east of the busway, to a new location to the west of the busway as shown on the Amended Proposed Site Section Sheets (1) [CD-CR.6].
- 3.2.2
- The revised location of the two ecological ponds allows for the alignment of the proposed access and maintenance tracks in this location to be straightened and the small parcel of land where the two ecological ponds were originally located is no longer required.
- 3.2.3
- The original Scheme design is shown on page 23 of the ES Appendix 2.2 LEMP [CD1-10.05].

Reducing shading of aquatic habitats in Hobson's Conduit

- 3.2.4
- The proposed Hobson's Conduit Bridge has been amended by narrowing the width of the bridge deck by 1.75 m to a new width of 13.15 m, and by increasing the length of the bridge span by 1.5 m to a new length of 16.5 m.
- 3.2.5
- The amended design will result in a larger aperture which will allow more natural light to penetrate underneath the bridge. Combined with the narrowing of the bridge deck, there will be a reduction in the area of shading underneath the bridge compared to the original design.

Minimising the risk of disrupting groundwater flows

- 3.2.6
- Hobson's Conduit is a man-made channel that conveys surface water from natural springs located in the Nine Wells Local Nature Reserve (LNR) immediately adjacent to the Order limits. HCT have raised concerns that the excavation works for Ecological Pond 3 and Attenuation Pond 1, set out in the original ES, risk disrupting the ground water flows that feed the natural springs. HCT have also observed shallow ground water weeping from the southern bank of Hobson's Conduit and are concerned that Ecological Pond 3 and Attenuation Pond 1 would disrupt these flows, potentially reducing the overall flow of Hobson's Conduit.

- 3.2.7
- To minimise both of these risks, Change request 2 removes Ecological Pond 3 entirely from the Scheme, and relocates Attenuation Pond 1 closer to the busway and further from the springs in Nine Wells. The shape and orientation of Attenuation Pond 1 in the preliminary design has been amended so that the revised pond design is elongated and orientated parallel to the busway. This minimises any potential disruption of shallow ground water flows that cause the observed weeping in the southern bank of Hobson's Conduit. This will be confirmed at the detailed design stage.
- 3.2.8
- Ecological Pond 3 was intended to provide mitigation for water voles, which have been recorded in Hobson's Conduit. The assessed impact was a reduction in suitable habitat due to the presence of the Hobson's Conduit Bridge and Ecological Pond 3 would provide compensatory habitat within close proximity to the impacted location. Following engagement with HCT, it is now proposed to improve the suitability of the southern bank of Hobson's Conduit for water vole, by removing the existing scrub and vegetation, and exposing the bank. This would be complemented by the proposed grassland planting in the area of land south of Hobson's Conduit which would provide additional foraging habitat for water vole. Ecological Pond 3 would then not be required and so would be removed.
- 3.2.9
- The revised landscape design showing the removal of Ecological Pond 3 and the amended design of Attenuation Pond 1 is shown on Amended Proposed Site Section Sheets (1) [CD-CR.6]. The original Scheme design is shown on page 23 of the ES Appendix 2.2 LEMP [CD1-10.05].

Minimising the risk of water quality impacts

Construction phase water quality

- 3.2.10
- HCT have raised concerns about the proximity of construction compound 1 (referred to as construction compound 7 in the original ES) to both the Nine Wells LNR and Hobson's Conduit. The original ES had assumed that the boundary of the construction compound could abut the Nine Wells LNR and Hobson's Conduit. Change request 2 reduces the maximum size of construction compound 1 so that there would be a minimum of 40 m between the edge of the construction compound and the Nine Wells LNR and Hobson's Conduit. The revised construction compound confirming the 40 m buffer is shown on the Amended Construction Compounds drawing [CD-CR.8].

Operational phase water quality

- 3.2.11
- HCT are concerned about the impact of contaminated surface water runoff from the busway impacting the water quality of Hobson's Conduit, particularly with regards to de-icing salt. The original drainage strategy [CD1-10.04] already allows for any necessary pollution control measures that would be required and this will be confirmed at the detailed design stage.
- 3.2.12
- To provide reassurance that surface water runoff will be adequately treated before being discharged to Hobson's Conduit, a commitment has been made to include a reed bed treatment train as part of Attenuation Pond 1 as shown on Amended Proposed Site Section Sheets (1) [CD-CR.6].

3.3 Consideration of environmental effects

Reducing Order Limits

- 3.3.1
- The reduction in Order Limits has resulted in the relocation of two ecological ponds. These are required to mitigate potential impacts on great crested newts as there are records of great crested newts in the nearby existing attenuation pond and North Ditch from previous surveys. The relocation of these two ponds to the other side of the busway would not change the effectiveness of these ponds in delivering the intended mitigation. No other assessments from the original ES [CD1-10.02] would be affected by this change and the conclusions of the original ES [CD1-10.02] remain valid.

Reducing shading of aquatic habitats in Hobson's Conduit

- 3.3.2 The reduced width and increase span of the amended design of the proposed Hobson's Conduit bridge would result in a slightly reduced shading impact compared to the original design. The original ES (CD1-10.02) assessed Hobson's Conduit as being of local sensitivity and the shading impact as being a minor magnitude impact resulting a slight adverse and not significant effect. Whilst the amended bridge design would slightly reduce the shading impact, the impact magnitude would still be slight, and the assessed effect would still be slight adverse and not significant.

Minimising the risk of disrupting groundwater flows

- 3.3.3 The original ES (CD1-10.02) assessed the impact of the Hobson's Conduit bridge piles on groundwater flows and concluded that there would be a negligible impact magnitude resulting in a slight adverse but not significant effect. This remains the case with the amended bridge design.
- 3.3.4 The proposed removal of Ecology Pond 3 means that there would be no impact on groundwater flows. Attenuation Pond 1 would be lined to prevent groundwater intrusion which would reduce the attenuation capacity of the pond. As such, any lateral groundwater flows contributing to the flow of Hobson's Conduit would be maintained as flow paths would continue around the pond. There would be a negligible impact magnitude which would result in a slight adverse but not significant effect due to the high value of Hobson's Conduit. No further mitigation beyond the amended design is proposed.
- 3.3.5 The mitigation provided by Ecology Pond 3 for compensatory water vole habitat would instead be provided by the improved habitat along the southern bank of Hobson's Conduit.

Minimising the risk of water quality impacts

Construction phase effects

- 3.3.6 The original ES (CD1-10.02) assessed the impact of pollution from sediment laden runoff, accidental spills and leaks of oil and chemicals, wet cement or concrete, as having a negligible impact resulting in a slight adverse effect due to the proposed best practice mitigation that would be implemented. The 40 m buffer between the construction compound and Nine Wells LNR and Hobson's Conduit, proposed as part of change request 2, would further mitigate the impact which would still be negligible and would still result in a slight and not significant effect.

Operational phase effects

- 3.3.7 The original ES (CD1-10.02) assessed the impact of surface water drainage on the water quality of Hobson's Conduit as negligible due to the provision of pollution control measures in the drainage strategy (CD1-10.04). This was assessed as a slight adverse and not significant effect due to the high value of Hobson's Conduit. The additional pollution control via the reed bed treatment train would further reduce the impact, which would still be negligible and would still be a slight adverse and not significant effect.

4. Change request 3

4.1 Reason for the change

- 4.1.1 As with Change request 2, negotiations with the land owner at the River Granta (Stapleford) Crossing have progressed resulting in a design change to remove two triangular shaped land parcels from the Order Limits.

4.2 Description of the change

- 4.2.1 The land that will be removed from the Order Limits was intended to provide landscape mitigation to the River Granta (Stapleford) Crossing, in the form of screening vegetation, and some enhancement, in the form of wildflower meadow planting. The enhancement is not required to mitigate any assessed environmental effects so can be removed from the Scheme. The landscape design has been amended within the revised Order limits as follows:
- Triangular block of woodland providing visual screening moved closer to the southern bridge abutment
 - Additional woodland planting on the bridge abutment
 - Reconfiguration of the compensatory ditch habitat
- 4.2.2 the Amended Proposed Site Section Sheets (1) **[CD-CR.6]** shows the amended Order Limits and amended landscape design. The original Scheme design is shown on page 30 of the ES Appendix 2.2 LEMP **[CD1-10.05]**.

4.3 Consideration of environmental effects

- 4.3.1 Changes to the Order Limits at the River Granta (Stapleford) Crossing would reduce the amount of land available for the landscape design. At this location, the Scheme's original landscape design proposed extensive areas of wildflower meadow, scattered trees, a small block of woodland, and compensatory ditch habitat.
- 4.3.2 The area of wildflower meadow was enhancement, whilst the other areas of planting were mitigation for habitat loss, integration into the surrounding landscape, and visual screening of the proposed viaduct. In the amended landscape design, all of the mitigation planting and habitats have been moved into the revised Order Limits so that they still effectively perform their mitigation function.
- 4.3.3 The total area of wildflower meadow planting will be reduced as a result of the amended Order Limits but as this planting type was for enhancement only, there would be no change to the conclusions of the original ES (CD1-10.02). There would be a reduction in the area available for Biodiversity Net Gain (BNG) and the BNG calculations have been updated accordingly (Appendix A). The updated calculations show that there would be a BNG increase of 31.88% for habitats. 78.35% for hedgerows, and 3.88% for watercourses.

5. Assessment of effects from dewatering

5.1 Description of dewatering activities

- 5.1.1 The original ES assumed that no dewatering would be required during the construction of the Scheme. Further work has been undertaken on the approach to constructing the Scheme. It is now considered likely that dewatering will be required for the foundations of the Hobson's Conduit and two River Granta crossings.
- 5.1.2 The Ground Investigation Report [CD1-10.26] shows that groundwater depths, standing after 20 minutes, at the locations of the three bridges are as follows:
- Hobson's Conduit crossing: 0.86 mbgl to 3.2 mbgl
 - River Granta (Stapleford) crossing: 0.00 mbgl to 1.91 mbgl
 - River Granta (Babraham) crossing: 0.86 mbgl to 3.90 mbgl
- 5.1.3 These levels will fluctuate over time depending on seasonality, rainfall, and river flow levels over the preceding weeks.
- 5.1.4 To construct the piers of the two River Granta crossings, excavations of approximately 2 mbgl are expected to be required. This will provide sufficient depth to construct the pile cap at a thickness of 1,500 mm with a 500 mm cover of soil on top of the pile cap. Similar depth excavations are expected to be required for the abutments of all three bridges.
- 5.1.5 At these depths it is likely that some groundwater will be encountered which will require pumping to create a dry working area.

5.2 Impact assessment

- 5.2.1 The dewatering could have potential effects on groundwater and the surface water bodies which will receive the pumped and discharged water. The effects on these two receptors are assessed in the Tables 5-1 and 5-2 respectively. Effects will only occur during the construction phase whilst the bridge foundations are being constructed.

Table 5-1 Assessment of effects on groundwater

Baseline		Impact assessment					
Receptor	Value	Impact	Mitigation		Magnitude	Residual Effect	Significance
Groundwater	High	Dewatering excavations of the River Granta and Hobson's Conduit crossings	GS7	Completion of a hydrogeological impact assessment.	Minor	Groundwater levels will be impacted as a consequence of localised dewatering, given the expected depth of the works (2.1 m bgl) and measured groundwater levels (0.3 - 0.5 m bgl at Hobson's Conduit and 2.85 - 3.3 m bgl at River Granta) required drawdowns are expected to be minimal. Where required, groundwater controls such as coffer dams, sheet piles etc will be utilised to restrict abstraction rates and drawdowns. All water is expected to be returned to the adjacent rivers or permeable vegetated ground nearby, which will limit impact to the wider water environment.	Slight adverse Not significant

Table 5-2 Assessment of effects on surface water

Baseline		Impact assessment					
Receptor	Value	Impact	Mitigation		Magnitude	Residual Effect	Significance
Hobson's Conduit	High	Discharge of dewatered water from excavations for the foundations of the Hobson's Conduit crossing	WE8	Safe disposal of pumped water	Minor	The groundwater quality in the vicinity of Hobson's Conduit is not expected to be significantly different to the receiving surface water in Hobson's Conduit due to locality. The nature of dewatering activities means that an increase in suspended solids is likely in the discharged water which could adversely impact the water quality of Hobson's Conduit downstream of the discharge point. Discharge to Hobson's Conduit will need to be undertaken in accordance with a permit from the Environment Agency and as such will be subject to prescriptive conditions, including requirements to meet suspended solids concentrations. Proprietary treatment to meet these conditions is proposed to meet these requirements and as such the magnitude of impact is expected to be minor resulting in a slight adverse and not significant effect.	Slight adverse Not significant
River Granta	High	Discharge of dewatered water from excavations for the foundations of the River Granta crossings	WE8	Safe disposal of pumped water	Minor	The groundwater quality in the vicinity of the River Granta at both the Stapleford and Babraham crossings is not expected to be significantly different to the receiving surface water in the River Granta due to locality. The nature of dewatering activities means that an increase in suspended solids is likely in the discharged water which could adversely impact the water quality of the River Granta downstream of the discharge point. Discharge to the River Granta will need to be undertaken in accordance with a permit from the Environment Agency and as such will be subject to prescriptive conditions, including requirements to meet suspended solids concentrations. Proprietary treatment to meet these conditions is proposed to meet these requirements and as such the magnitude of impact is expected to be minor resulting in a slight adverse and not significant effect.	Slight adverse Not significant

5.3 Mitigation

GS7 Completion of a Hydrogeological Impact Assessments

- 5.3.1 A hydrogeological impact assessment will be undertaken during detailed design in accordance with the Environmental Agency guidance¹. The hydrogeological impact assessment will consider the specifics of the proposed dewatering, quantify the impacts and identify any mitigation that may be required.

WE8 Safe Disposal of Pumped Water

- 5.3.2 Pumping works will be controlled using a 'Permit to Pump' system to prevent pollution of drainage systems or receiving water courses. In general, small volumes of localised pumping to dewater excavations will be discharged to an area of vegetated ground close to the excavation. Measures for prevention of pollution during larger dewatering activities will be agreed with the Environment Agency and could include the use of Silt Busters or other similar technologies. The method for treating discharged water will be determined at the detailed design stage.

5.4 Monitoring

- 5.4.1 Discharge from dewatering activities may be subject to permitting requirements as per Environment Agency Guidance². In line with these requirements, baseline conditions of the receptor will be required and as such pre-construction monitoring for a minimum of 12 months (ideally 36 samples covering a full seasonal range), with monthly sampling will be required. During construction compliance checks may also be required, which will include water quality monitoring and daily visual inspections. Details of monitoring plans should be included within the relevant CEMP documents.

¹ <https://www.gov.uk/government/publications/preparing-a-hydrogeological-impact-assessment/preparing-a-hydrogeological-impact-assessment>

² [Risk assessments for specific activities: environmental permits - GOV.UK](#)

6. Conclusion

- 6.1.1 The three proposed changes are minor, and none would result in significant effects. Appropriate mitigation to minimise effects has already been identified in the ES, and no further mitigation is necessary as a result of any of the changes.
- 6.1.2 There would be no change to the conclusions of the cumulative effects assessment in the original ES. Change requests 2 and 3 are to reduce the extent of the Order Limits resulting in a smaller overall footprint whilst still delivering the same mitigation through the landscape design. Neither of these two changes would affect the aspects assessed in the cumulative effects assessment.
- 6.1.3 Change request 1 increases the Order Limits and introduces new construction activity but the impacts are minimal and appropriate mitigation has already been identified to ensure that no significant effects would arise including cumulative effects.
- 6.1.4 The assessment of the effects of dewatering the foundations of the three watercourse crossings has identified the need for additional mitigation and monitoring to prevent significant effects arising to surface and ground water bodies. This would be a permissible activity, and the Environment Agency would need to agree the necessary mitigation and monitoring prior to issuing a permit. No significant effects are predicted to arise.

DRAFT

Appendix A. Updated Biodiversity Net Gain (BNG) assessment

A.1 Introduction

- A.1.1 The Environmental Assessment for the proposed Cambridge South East Transport (CSET) scheme (hereafter referred to as the Proposed Scheme) was published in January 2025. Although Biodiversity Net Gain (BNG) is not a mandatory requirement for a Transport and Works Act Order (TWAO) application, a voluntary BNG assessment was undertaken for the Proposed Scheme to help quantify habitat loss and creation. This assessment was submitted as Appendix 10.12 in support of the Environmental Impact Assessment (EIA). However, since submission of the application documents, minor amendments have been undertaken to the Proposed Scheme boundary. Therefore, this Technical Note has been produced to update the BNG assessment as a result of minor alterations to the Proposed Scheme boundary.

A.2 Background habitat summary

- A.2.1 The desk study identified six statutory designated sites for nature conservation within 2 km of the Site. Of these, four were Sites of Special Scientific Interest (SSSI) and two were Local Nature Reserves (LNRs). A total of 24 non-statutory designated sites for nature conservation were identified within 2 km of the Site.
- A.2.2 The desk study found no ancient woodland/ veteran trees within the Site during the desk study. Native hedgerows, lowland mixed deciduous woodland, and the River Granta are priority habitats within the Proposed Scheme boundary.
- A.2.3 The majority of the Site comprised cropland composed of cereal and non-cereal crops. Other habitats include grassland comprising other neutral grassland and modified grassland predominantly in Good or Moderate condition, heathland and scrub comprising mixed scrub in Moderate condition, and a single non-priority pond in Poor condition. Other areas of the Site comprise existing roads and footpaths classified as developed land/ sealed surface for which there is no condition assessment. Urban trees are also present within the Site to the north of the Site. Woodland is also present on Site comprising other broadleaved and lowland mixed deciduous woodland.
- A.2.4 The Site comprises native hedgerows predominately considered to be low distinctiveness in Moderate condition. Native hedgerow associated with bank or ditch and native hedgerow with trees of medium distinctiveness and Moderate or Good condition are also present. Native hedgerow associated with bank or ditch has been included as a hedgerow only in baseline unit calculations with the ditch assessed separately in the ditch assessment below.
- A.2.5 Native species rich hedgerows present on Site predominantly comprised medium distinctiveness, without trees or banks/ ditches, in Moderate or Good condition. Native species rich hedgerow with trees of high distinctiveness in Good condition is also present.
- A.2.6 Approximately 0.34 km of line of trees was recorded as being present on Site in either Poor condition due to their young age and being newly planted or as a precautionary Good condition as they were not accessed.
- A.2.7 The river condition assessment found that all sub-reaches on the River Granta were of River Type H (straight-sinuuous planform with a sand channel bed). Hobson's Brook was determined to have a River Type K (straight/sinuuous with a silt channel bed)

A.3 September 2024 BNG assessment

Baseline BNG assessment

A.3.1 The baseline BNG score for area habitats, hedgerow habitats, and watercourses are provided in Tables A.1 to A.3.

Table A.1 - Baseline area habitat scores and unit values within the Site

Broad habitat	Proposed habitat	Baseline area (ha)	Distinctiveness		Condition		Strategic significance		Baseline units	Retained area (ha)	Retained units
			Band	Score	Band	Score	Band	Score			
Urban	Bare ground	0.82	Low	2	Poor	1	Low	1	1.64	0.1275	0.26
Cropland	Cereal crops	95.52	Low	2	N/A	1	Low	1	191.04	0.1474	0.29
Urban	Developed land; sealed surface	3.68	V. Low	0	N/A - Other	0	Low	1	0.00	1.4115	0.00
Grassland	Other neutral grassland	0.58	Medium	4	Good	3	Low	1	6.96	0.0038	0.05
Grassland	Other neutral grassland	3.7	Medium	4	Moderate	2	Low	1	29.60	1.3357	10.69
Grassland	Other neutral grassland	3.57	Medium	4	Poor	1	Low	1	14.28	0.174	0.70
Grassland	Modified grassland	0.94	Low	2	Good	3	Low	1	5.64	0.0699	0.42
Grassland	Modified grassland	2.29	Low	2	Moderate	2	Low	1	9.16	0	0.00
Grassland	Modified grassland	0.5	Low	2	Poor	1	Low	1	1.00	0.1595	0.32
Heathland and shrub	Bramble scrub	0.03	Medium	4	N/A	1	Low	1	0.12	0.0083	0.03
Heathland and shrub	Mixed scrub	0.15	Medium	4	Moderate	2	Low	1	1.20	0.0524	0.42
Heathland and shrub	Mixed scrub	0.04	Medium	4	Poor	1	Low	1	0.16	0	0.00
Lakes	Ponds (non-priority habitat)	0.02	Medium	4	Poor	1	Low	1	0.08	0.0147	0.06
Woodland and forest	Lowland mixed deciduous woodland	0.02	High	6	Moderate	2	High	1.15	0.28	0	0.00
Woodland and forest	Lowland mixed deciduous woodland	0.65	High	6	Poor	1	High	1.15	4.49	0.6485	4.47
Woodland and forest	Other woodland; broadleaved	1.14	Medium	4	Moderate	2	Low	1	9.12	0	0.00
Woodland and forest	Other woodland; broadleaved	0.39	Medium	4	Poor	1	Low	1	1.56	0	0.00
Urban	Artificial unvegetated, unsealed surface	0.52	V. Low	0	N/A - Other	0	Low	1	0.00	0	0.00

Broad habitat	Proposed habitat	Baseline area (ha)	Distinctiveness		Condition		Strategic significance		Baseline units	Retained area (ha)	Retained units
			Band	Score	Band	Score	Band	Score			
Individual trees	Urban tree	0.0814	Medium	4	Good	3	Low	1	0.98	0.0814	0.98
Individual trees	Rural tree	0.2484	Medium	4	Moderate	2	Low	1	1.99	0.2484	1.99
Totals		114.56 (114.89 incl. trees)							279.29	4.48	20.67

Table A.2 Baseline hedgerow habitat scores and unit values within the Site

Proposed habitat	Baseline length (km)	Distinctiveness		Condition		Strategic significance		Baseline units	Retained length (ha)	Retained units
		Band	Score	Band	Score	Band	Score			
Line of trees	0.56	Low	2	Good	3	Medium	1.1	3.70	0.52	3.43
Line of trees	0.06	Low	2	Moderate	2	Medium	1.1	0.26	0	0.00
Native hedgerow	1.54	Low	2	Good	3	High	1.15	10.63	1.14	7.87
Native hedgerow	0.25	Low	2	Moderate	2	High	1.15	1.15	0.2	0.92
Native hedgerow	0.01	Low	2	Poor	1	High	1.15	0.02	0.01	0.02
Native hedgerow - associated with bank or ditch	0.66	Medium	4	Good	3	High	1.15	9.11	0.62	8.56
Native hedgerow - associated with bank or ditch	0.93	Medium	4	Moderate	2	High	1.15	8.56	0.78	7.18
Native hedgerow with trees	0.32	Medium	4	Good	3	High	1.15	4.42	0.28	3.86
Native hedgerow with trees	0.19	Medium	4	Moderate	2	High	1.15	1.75	0.15	1.38
Non-native and ornamental hedgerow	0.32	V.Low	1	Poor	1	High	1.15	0.37	0.32	0.37
Species-rich native hedgerow	1.31	Medium	4	Good	3	High	1.15	18.08	1.26	17.39
Species-rich native hedgerow	0.08	Medium	4	Moderate	2	High	1.15	0.74	0	0.00
Species-rich native hedgerow	0.8	Medium	4	Poor	1	High	1.15	3.68	0.8	3.68
Species-rich native hedgerow - associated with bank or ditch	0.25	High	6	Good	3	High	1.15	5.18	0.25	5.18
Species-rich native hedgerow with trees	0.44	High	6	Good	3	High	1.15	9.11	0.29	6.00
Total	7.72							76.73	6.62	65.83

Table A.3 On-site baseline watercourse units for rivers/ streams

Watercourse	Location	Length km (within the RLB)	River type (Distinctiveness)	Strategic significance	Condition	Extent of watercourse encroachment	Extent of riparian encroachment	Baseline WUs
River Granta (D1-S1)	Adjoining A11 and RLB at southern limit of Proposed Development	0.202	Priority Habitat (Very High)	Formally identified in local strategy (High)	Fairly Poor	Major	No Encroachment/ No Encroachment	1.39
River Granta (D1-S3)	Structure 8 crossing at Babraham	0.135	Priority Habitat (Very High)	Formally identified in local strategy (High)	Moderate	Major	Minor/ No Encroachment	1.22
River Granta (D2-S1)	Immediately upstream of D2-S2, near the Structure 6 crossing	0.373	Priority Habitat (Very High)	Formally identified in local strategy (High)	Moderate	No Encroachment	Moderate/ No Encroachment	6.31
River Granta (D2-S2)	Structure 6 crossing at Stapleford	0.132	Priority Habitat (Very High)	Formally identified in local strategy (High)	Fairly Poor	No Encroachment	Moderate/ No Encroachment	1.68
Hobson's Brook (D4-S1)	Structure 4 crossing near Addenbrooke's Road	0.144	Other Rivers and Streams (High)	Formally identified in local strategy (High)	Fairly Poor	No Encroachment	Major/ Moderate	1.19
D2E	Tributary of the River Granta near Structure 6	0.240	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.96
D5A	Near Graham's Road	0.159	Ditches (Medium)	Low	Poor	No Encroachment	Minor/ No Encroachment	0.62
W2	Crossed by Structures 1, 2 and 3 near Addenbrooke's Road	0.153	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.61
W3	Near Stapleford	0.121	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.48
W4	Crossed by Structure 7 at Sawston	0.174	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.70
W5	Near Sawston	0.472	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	1.64
W6	Crossed by Structure 5 at Stapleford, near River Granta	0.468	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	1.87
W7	Adjoining railway at Addenbrooke's Road	0.020	Ditches (Medium)	Low	Poor	No Encroachment	Major/ No Encroachment	0.07
W8	Near Addenbrooke's Road	0.153	Ditches (Medium)	Low	Poor	No Encroachment	Major/ No Encroachment	0.53

Watercourse	Location	Length km (within the RLB)	River type (Distinctiveness)	Strategic significance	Condition	Extent of watercourse encroachment	Extent of riparian encroachment	Baseline WUs
W22	Near Graham's Road	0.118	Ditches (Medium)	Low	Poor	No Encroachment	Minor/ No Encroachment	0.46
W24	Near Francis Crick Avenue	0.099	Ditches (Medium)	Low	Poor	No Encroachment	Minor/ No Encroachment	0.30
W27	Alongside Nine Wells LNR	0.175	Ditches (Medium)	Low	Poor	No Encroachment	Major/ Major	0.61
W29	Near Francis Crick Avenue	0.024	Ditches (Medium)	Low	Poor	No Encroachment	Major/ No Encroachment	0.07
Totals		3.362						20.71

Post construction habitat creation

A.3.2 The post constriction habitat creation BNG score for area habitats, hedgerow habitats, and watercourses are provided in Tables A.5 to A.7.

Table A.4 On site area habitat creation

Broad habitat	Proposed habitat	Proposed area (ha)	Distinctiveness		Condition		Strategic significance		Habitat units delivered
			Band	Score	Band	Score	Band	Score	
Urban	Lowland calcareous grassland	0.20	High	6	Moderate	2	High	1.15	0
Cropland	Modified grassland	1.61	Low	2	Poor	1	Medium	1.10	56.23
Cropland	Other neutral grassland	16.09	Medium	4	Moderate	2	High	1.15	11.67
Cropland	Other neutral grassland	24.17	Medium	4	Moderate	2	Medium	1.10	13.14
Grassland	Mixed scrub	0.16	Medium	4	Moderate	2	Medium	1.10	0.64
Grassland	Ponds (Non- Priority Habitat)	1.87	Medium	4	Moderate	2	Medium	1.10	3.41
Woodland	Lowland mixed deciduous woodland	1.33	High	6	Moderate	2	High	1.15	123.87
Woodland	Other woodland; broadleaved	5.01	Medium	4	Moderate	2	Medium	1.10	178.00
Heathland and shrub	Arable field margins game bird mix	0.18	Medium	4	N/A	1	Medium	1.10	1.19
Lakes	Arable field margins pollen & nectar	2.03	Medium	4	N/A	1	Medium	1.10	14.77
Woodland and forest	Lowland calcareous grassland	0.20	High	6	Moderate	2	High	1.15	1.94
Woodland and forest	Modified grassland	1.61	Low	2	Poor	1	Medium	1.10	25.84
Cropland	Other neutral grassland	16.09	Medium	4	Moderate	2	High	1.15	0.76

Broad habitat	Proposed habitat	Proposed area (ha)	Distinctiveness		Condition		Strategic significance		Habitat units delivered
			Band	Score	Band	Score	Band	Score	
Cropland	Other neutral grassland	24.17	Medium	4	Moderate	2	Medium	1.10	8.62
Total area (ha)		110.40	Total units						440.08

Table A.5 On site habitat hedgerow habitat creation

Broad habitat	Proposed habitat	Total length (km)	Distinctiveness		Condition		Strategic significance		Habitat units delivered
			Band	Score	Band	Score	Band	Multiplier	
Hedgerow	Native Species Rich Hedgerow	11.55	Medium	4	Moderate	2	High	1.15	82.81
Hedgerow	Native Species Rich Hedgerow with Trees	0.35	High	6	Moderate	2	High	1.15	3.15
Total		11.9	Total						85.96

Table A.6 On site watercourse habitat creation

Watercourse	Sub-reach	Baseline Length (within site boundary) (km)	Baseline Units	Length Lost (km)	Length Retained (km)	Length Enhanced (km)	Length Created (km)	Retained Units	Units Lost	Baseline Units Enhanced	Units Generated	Total Post-works Units
River Granta	D1-S1	0.202	1.39	0	0.202	0	0	1.39	0	0	0	1.39
	D1-S3	0.135	1.22	0.02 (at Moderate)	0.115	0	0.02 (at Fairly Poor)	1.04	0.18	0	0.04*	1.08
	D2-S1	0.373	6.31	0	0	0.373	0	0	0	6.31	6.86**	6.86
	D2-S2	0.132	1.68	0	0.017	0.115	0	0.22	0	1.46	1.59**	1.82
Hobson's Brook	D4-S1	0.144	1.19	0.012 (at Fairly poor)	0	0.132	0.012 (at Poor)	0	0.10	1.09	1.28***	1.28
D2E		0.240	0.96	0	0.240	0	0	0.96	0	0	0	0.96
D5A		0.159	0.62	0	0.159	0	0	0.64	0	0	0	0.62
W2		0.153	0.61	0.047	0.106	0	0	0.42	0.19	0	0	0.42
W3		0.121	0.48	0	0.121	0	0	0.48	0	0	0	0.48
W4		0.174	0.70	0.031	0.143	0	0	0.57	0.12	0	0	0.57

Watercourse	Sub-reach	Baseline Length (within site boundary) (km)	Baseline Units	Length Lost (km)	Length Retained (km)	Length Enhanced (km)	Length Created (km)	Retained Units	Units Lost	Baseline Units Enhanced	Units Generat ed	Total Post- works Units
W5		0.472	1.64	0.472	0	0	0.472	0	1.64	0	1.06	1.06
W6		0.468	1.87	0.030	0.438	0	0	1.75	0.12	0	0	1.75
W7		0.020	0.07	0	0.020	0	0	0.07	0	0	0	0.07
W8		0.153	0.53	0	0.153	0	0	0.53	0	0	0	0.53
W22		0.118	0.46	0	0.118	0	0	0.46	0	0	0	0.46
W24		0.099	0.30	0	0.099	0	0	0.30	0	0	0	0.30
W27		0.175	0.61	0	0.175	0	0	0.61	0	0	0	0.61
W29		0.024	0.07	0	0.024	0	0	0.07	0	0	0	0.07
Culverts		0	0	0	0	0	0.108	0	0	0	0.09	0.09
Travel hub ditches		0	0	0	0	0	0.170	0	0	0	0.71	0.71
River Granta (Stapleford) Crossing ditches		0	0	0	0	0	0.489	0	0	0	2.04	2.04
Total (Rivers/ streams)		3.362	20.71	0.58	2.13	0.62	1.239	9.51	2.35	8.86	3.9	23.17
<p>Note: numbers shown as are they are displayed in the Statutory Metric</p> <p>Note: Minor discrepancies in the addition and subtraction of WUs are a result of rounding to two decimal places.</p> <p>* WUs generated through re-creation of Rivers/ streams to capture a reduction in condition associated with Proposed Development crossings, as per the guidance.</p> <p>** WUs generated through enhancement of Rivers/ streams associated with enhancement to the riparian zone.</p> <p>*** WUs generated through enhancement of Rivers/ streams, by recording a reduction in condition of Hobsons's Brook where there is a new viaduct crossing, and WUs delivered through enhancement of the riparian zone.</p>												

Trading rules

A.3.3 For the September 2024 the metric shows that for habitats, hedgerows, watercourses that the trading rules were met.

Summary

A.3.4 The assessment shows that the Proposed Scheme is predicted to result in a net gain of 140.46 units, with a predicted total net change of +50.29%.

A.3.5 The net change in hedgerow units is +75.05 which is a net gain of 97.81%. AHBU and HBU achieve and surpasses the 20% biodiversity net gain target for the Proposed Scheme.

A.3.6 The Proposed Scheme is also predicted to result in a net gain for watercourses, at 2.46 units which equates to a 9.89% net gain.

A.4 September 2026 update BNG assessment

A.4.1 Following amendments to the Proposed Scheme red line boundary in 2025/26, it was necessary to update the BNG to reflect how the reduction of the red line boundary has affected the BNG assessment.

September 2026 update baseline BNG assessment

A.4.2 The baseline BNG score for habitats, hedgerows and watercourses are provided in Table A.7 to A.9. Since 2024, Cambridgeshire has released Cambridgeshire and Peterborough Local Nature Recovery Strategy³. As a result, the strategic significance has changed, namely, all baseline habitats have been inputted as 'low' in line with the BNG User Guide. Owing to the detail provided within the landscape design, the habitat creation has been recorded as low strategic significance; however, this is not considered to be a constraint as this would be an underestimate of biodiversity units, therefore the BNG recorded could only increase as the design develops.

Table A.7 September 2026 update baseline area habitat scores and unit values within the Site

Broad habitat	Proposed habitat	Baseline area (ha)	Distinctiveness		Condition		Strategic significance		Baseline units	Retained area (ha)	Retained units
			Band		Score		Band				
Urban	Vacant or derelict land	0.8209	Low	2	Poor	1	Low Strategic Significance	1	1.64	-	0.00
Cropland	Cereal crops	90.2426	Low	2	Condition Assessment N/A	1	Low Strategic Significance	1	180.49	1.62	3.24
Urban	Developed land; sealed surface	4.4811	V. Low	0	N/A - Other	0	Low Strategic Significance	1	0.00	1.723	0.00
Woodland and forest	Lowland mixed deciduous woodland	0.0631	High	6	Moderate	2	Low Strategic Significance	1	0.76	-	0.00
Woodland and forest	Lowland mixed deciduous woodland	0.9266	High	6	Poor	1	Low Strategic Significance	1	5.56	0.8391	5.03
Woodland and forest	Other woodland; broadleaved	1.1364	Medium	4	Moderate	2	Low Strategic Significance	1	9.09	0.164	1.31
Woodland and forest	Other woodland; broadleaved	0.3862	Medium	4	Poor	1	Low Strategic Significance	1	1.54	-	0.00
Lakes	Ponds (non-priority habitat)	0.0207	Medium	4	Poor	1	Low Strategic Significance	1	0.08	0.0146	0.06
Grassland	Other neutral grassland	0.5635	Medium	4	Good	3	Low Strategic Significance	1	6.76	0.0006	0.01
Grassland	Other neutral grassland	3.0519	Medium	4	Moderate	2	Low Strategic Significance	1	24.42	0.7431	5.94
Grassland	Other neutral grassland	2.6505	Medium	4	Poor	1	Low Strategic Significance	1	10.60	0.2039	0.82
Grassland	Modified grassland	0.9983	Low	2	Good	3	Low Strategic Significance	1	5.99	0.2784	1.67
Grassland	Modified grassland	2.2888	Low	2	Moderate	2	Low Strategic Significance	1	9.16	-	0.00
Grassland	Modified grassland	0.6409	Low	2	Poor	1	Low Strategic Significance	1	1.28	0.1721	0.34

³ Local Nature Recovery Strategy (LNRS) - Cambridgeshire & Peterborough Combined Authority

Broad habitat	Proposed habitat	Baseline area (ha)	Distinctiveness		Condition		Strategic significance		Baseline units	Retained area (ha)	Retained units
			Band		Score		Band				
Heathland and shrub	Bramble scrub	0.0257	Medium	4	Condition Assessment N/A	1	Low Strategic Significance	1	0.10	-	0.00
Heathland and shrub	Mixed scrub	0.2735	Medium	4	Moderate	2	Low Strategic Significance	1	2.19	0.0384	0.31
Heathland and shrub	Mixed scrub	0.0439	Medium	4	Poor	1	Low Strategic Significance	1	0.18	-	0.00
Urban	Artificial unvegetated, unsealed surface	0.5167	V. Low	0	N/A - Other	0	Low Strategic Significance	1	0.00	-	0.00
Individual trees	Urban tree	0.0814	Medium	4	Good	3	Low Strategic Significance	1	0.98	0.0814	0.98
Individual trees	Rural tree	0.2484	Medium	4	Moderate	2	Low Strategic Significance	1	1.99	0.2484	1.99
Totals		109.46 (109.13 incl. trees)	-						262.80	6.13	21.70

Table A.8 September 2026 update baseline linear hedgerow habitat scores and unit values within the Site

Proposed habitat	Baseline length (km)	Distinctiveness		Condition		Strategic significance		Baseline units	Retained length (ha)	Retained units
		Band	Score	Band	Score	Band	Score			
Line of trees	0.555	Low	2	Low	2	Low Strategic Significance	1	3.33	0.521	3.13
Line of trees	0.055	Low	2	Low	2	Low Strategic Significance	1	0.22	-	0.00
Native Hedgerow	1.541	Low	2	Low	2	Low Strategic Significance	1	9.25	1.136	6.82
Native Hedgerow	0.251	Low	2	Low	2	Low Strategic Significance	1	1.00	0.2	0.80
Native Hedgerow	0.011	Low	2	Low	2	Low Strategic Significance	1	0.02	0.011	0.02
Native hedgerow - associated with bank or ditch	0.662	Medium	4	Good	3	Low Strategic Significance	1	7.94	0.616	7.39
Native hedgerow - associated with bank or ditch	0.489	Medium	4	Moderate	2	Low Strategic Significance	1	3.91	0.34	2.72
Native hedgerow with trees	0.317	Medium	4	Good	3	Low Strategic Significance	1	3.80	0.282	3.38
Native hedgerow with trees	0.189	Medium	4	Moderate	2	Low Strategic Significance	1	1.51	0.152	1.22
Non-native and ornamental hedgerow	0.319	V. Low	1	Poor	1	Low Strategic Significance	1	0.02	0.018	0.02
Species-rich native hedgerow	1.306	Medium	4	Poor	1	Low Strategic Significance	1	0.30	0.301	0.30
Species-rich native hedgerow	0.084	Medium	4	Moderate	2	Low Strategic Significance	1	15.67	1.257	15.08

Proposed habitat	Baseline length (km)	Distinctiveness		Condition		Strategic significance		Baseline units	Retained length (ha)	Retained units
		Band	Score	Band	Score	Band	Score			
Species-rich native hedgerow	0.802	Medium	4	Poor	1	Low Strategic Significance	1	0.67	-	0.00
Species-rich native hedgerow - associated with bank or ditch	0.13	High	6	Good	3	Low Strategic Significance	1	3.21	0.802	3.21
Species-rich native hedgerow with trees	0.438	High	6	Good	3	Low Strategic Significance	1	2.34	0.13	2.34
Total	7.15							61.09	6.06	51.65

Table A.9 September 2026 update baseline watercourse units

Watercourse	Location	Length km	River type (Distinctiveness)	Strategic significance	Condition	Extent of watercourse encroachment	Extent of riparian encroachment	Baseline WUs	Units retained
River Granta (D1-S1)	Adjoining A11 and RLB at southern limit of Proposed Development	0.202	Priority Habitat (Very High)	Low	Fairly Poor	Major	No Encroachment/ No Encroachment	1.21	1.21
River Granta (D1-S3)	Structure 8 crossing at Babraham	0.135	Priority Habitat (Very High)	Low	Moderate	Major	Minor/ No Encroachment	1.06	0.19
River Granta (D2-S2)	Structure 6 crossing at Stapleford	0.132	Priority Habitat (Very High)	Low	Fairly Poor	No Encroachment	Moderate/ No Encroachment	1.46	0.19
Hobson's Brook (D4-S1)	Structure 4 crossing near Addenbrooke's Road	0.144	Other Rivers and Streams (High)	Low	Fairly Poor	No Encroachment	Major/ Moderate	1.04	0.00
D2E	Tributary of the River Granta near Structure 6	0.240	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.96	0.96
D5A	Near Graham's Road	0.159	Ditches (Medium)	Low	Poor	No Encroachment	Minor/ No Encroachment	0.62	0.62
W2	Crossed by Structures 1, 2 and 3 near Addenbrooke's Road	0.153	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.61	0.42
W3	Near Stapleford	0.121	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.48	0.48
W4	Crossed by Structure 7 at Sawston	0.174	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	0.70	0.57
W5	Near Sawston	0.472	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	1.64	0.00
W6	Crossed by Structure 5 at Stapleford, near River Granta	0.468	Ditches (Medium)	Low	Poor	No Encroachment	No Encroachment/ No Encroachment	1.87	1.75

Watercourse	Location	Length km	River type (Distinctiveness)	Strategic significance	Condition	Extent of watercourse encroachment	Extent of riparian encroachment	Baseline WUs	Units retained
W7	Adjoining railway at Addenbrooke's Road	0.020	Ditches (Medium)	Low	Poor	No Encroachment	Major/ No Encroachment	0.07	0.07
W8	Near Addenbrooke's Road	0.153	Ditches (Medium)	Low	Poor	No Encroachment	Major/ No Encroachment	0.53	0.53
W22	Near Graham's Road	0.118	Ditches (Medium)	Low	Poor	No Encroachment	Minor/ No Encroachment	0.46	0.46
W24	Near Francis Crick Avenue	0.099	Ditches (Medium)	Low	Poor	No Encroachment	Minor/ No Encroachment	0.30	0.30
W27	Alongside Nine Wells LNR	0.175	Ditches (Medium)	Low	Poor	No Encroachment	Major/ Major	0.61	0.61
W29	Near Francis Crick Avenue	0.024	Ditches (Medium)	Low	Poor	No Encroachment	Major/ No Encroachment	0.07	0.07
Totals		2.989						13.94	9.16

September 2026 Update Post Construction

A.4.3 The post constriction habitat creation BNG score for area habitats, hedgerow habitats, and watercourses are provided in Tables A.1 to A.12.

Table A.10 September 2026 update on Site area habitat creation

Broad habitat	Proposed habitat	Proposed area (ha)	Distinctiveness		Condition		Strategic significance		Habitat units delivered
			Band	Score	Band	Score	Band	Score	
Woodland and forest	Other woodland; broadleaved	4.2767	Medium	4	Moderate	2	Low Strategic Significance	1	18.67
Cropland	Cereal crops	41.3654	Low	2	Condition Assessment N/A	1	Low Strategic Significance	1	74.34
Grassland	Modified grassland	0.7129	Low	2	Poor	1	Low Strategic Significance	1	1.28
Grassland	Other neutral grassland	35.5286	Medium	4	Moderate	2	Low Strategic Significance	1	221.49
Lakes	Ponds (non-priority habitat)	0.3873	Medium	4	Moderate	2	Low Strategic Significance	1	2.59
Urban	Developed land; sealed surface	19.26	V. Low	0	N/A - Other	0	Low Strategic Significance	1	0.00
Grassland	Lowland calcareous grassland	0.2	High	6	Moderate	2	Low Strategic Significance	1	0.52
Individual trees	Rural tree	0.402	Medium	4	Moderate	2	Low Strategic Significance	1	1.14
Woodland and forest	Lowland mixed deciduous woodland	1.1	High	6	Moderate	2	Low Strategic Significance	1	1.39
Heathland and scrub	Mixed scrub	0.4	Medium	4	Moderate	2	Low Strategic Significance	1	2.49

Broad habitat	Proposed habitat	Proposed area (ha)	Distinctiveness		Condition		Strategic significance		Habitat units delivered
			Band	Score	Band	Score	Band	Score	
Total area (ha)		103.73 103.33 (excl. Rural trees)	Total units						324.37

Table A.11 September 2026 update on Site hedgerow habitat creation

Broad habitat	Proposed habitat	Total length (km)	Distinctiveness		Condition		Strategic significance		Habitat units delivered
			Band	Score	Band	Score	Band	Multiplier	
Hedgerow	Native Species Rich Hedgerow	8.74	Medium	4	Moderate	2	Low	1	54.49
Hedgerow	Native Species Rich Hedgerow with Trees	0.36	High	6	Moderate	2	Low	1	2.82
Total		9.1	Total						57.3

Table A.12 September 2026 update on Site watercourse creation

Watercourse Type	Total length (km)	Distinctiveness		Condition		Strategic significance		Watercourse units delivered
		Band	Score	Band	Score	Band	Multiplier	
Watercourse	0.025	V. High	8	Fairly Poor	1.5	Low Strategic Significance	1	0.04
Culvert	0.047	Low	2	Poor	1	Low Strategic Significance	1	0.04
Culvert	0.031	Low	2	Poor	1	Low Strategic Significance	1	0.03
Ditches	0.472	Medium	4	Poor	1	Low Strategic Significance	1	0.92
Culvert	0.03	Low	2	Poor	1	Low Strategic Significance	1	0.03
Ditches	0.17	Medium	4	Moderate	2	Low Strategic Significance	1	0.71
Ditches	0.256	Medium	4	Moderate	2	Low Strategic Significance	1	1.07
Other rivers and streams	0.012	High	6	Poor	1	Low Strategic Significance	1	0.02
Total	1.04	Total						2.85

Table 14 - September 2026 update on Site watercourse enhancement

Watercourse type	Total length (km)	Strategic significance score	Habitat units	Length	Watercourse units delivered
Watercourse	0.132	Low Strategic Significance	1.46	0.115	1.38
Other Rivers and Streams	0.144	Low Strategic Significance	1.03	0.132	1.09
Total			2.87	Total	2.47

Trading rules

A.4.4 For the September 2026 update, the metric shows that for habitats, hedgerows, watercourses that the trading rules were met.

Summary

- A.4.5 The assessment shows that the Proposed Scheme is predicted to result in
- a net gain of 83.27 area habitat units, which is a net gain of +31.68%.
 - a net gain of 47.86 hedgerow habitat units which is a net gain of +78.35%.
 - a net gain of 0.54 watercourse units which equates to a net gain of +3.88%.
- A.4.6 The net gain surpasses the statutory net gain target of 10% for both area habitats and hedgerow habitats; however, does not surpass 10% for watercourses.

Overall summary

- A.4.7 The Statutory Metric has been applied to the Proposed Scheme at the Site, based on the design at the time of publication of this report. A summary of the change in the BNG is provided in Table A.13.
- A.4.8 The September 2026 BNG update shows that, due to the reduction in the red line boundary, both the baseline units and post construction units for habitats, hedgerows and watercourses has reduced. However, as summarised in Table A.13, for habitats and hedgerows there is still a significant increase in BNG compared to the baseline which exceeds the statutory 10% net gain target for development for area habitats and hedgerows.
- A.4.9 In respect of watercourses, the drop in BNG is significant due an area within the red line boundary where ditches were to be created being removed from the design. Whilst the change in watercourse BNG is below the minimum statutory 10% net gain target, it is still positive.
- A.4.10 It should be noted that although watercourses is returning a BNG below the statutory target of 10%, BNG is not a statutory requirement for TWAO Schemes and, therefore, is not a legal requirement for this Proposed Scheme. As such, any positive net gain should be addressed in this context.
- A.4.11 Further refinement of the Proposed Scheme will be undertaken as the design progresses. This will include exploring further opportunities to improve the watercourse BNG score within the Proposed Scheme red line boundary.

Table A.13 September 2024 to September 2026 BNG change

Feature	September 2024				September 2026			
	Baseline units	Post construction units	Net change	BNG	Baseline units	Post construction units	Net change	BNG
Habitats	279.29	419.75	140.46	50.29%	262.80	346.06	83.27	31.68%
Hedgerows	76.73	151.79	75.05	97.81%	61.09	108.95	47.86	78.35%
Watercourses	20.97	23.04	2.07	9.89%	13.94	14.48	0.54	3.88%

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