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The Cambridge South East Transport Order

Cambridgeshire County Council

Transport and Works Act 1992

Transport and Works (Inquiries Procedure) Rules 2004

Inquiry into:

THE CAMBRIDGE SOUTH EAST TRANSPORT ORDER

PROOF OF EVIDENCE

of Daniel Parsons

of AtkinsRéalis

In respect of Environmental Impacts and Mitigation

On behalf of Cambridgeshire County Council

10th November 2026

Planning Inspectorate Reference: DPI/E0535/25/7

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1. INTRODUCTION

1.1 Qualifications

1.1.1 My name is Daniel Parsons, and I am a Chartered Environmentalist (CEnv) and Full Member of the Institute of Sustainability and Environmental Professionals. I hold a BSc (Hons) degree in Environmental Protection from Bournemouth University, and an MSc in Marine Environmental Protection from the University of Wales, Bangor (Bangor University). I am an Associate Director (Environment) in Planning, Environmental Consenting, and Communities Practice in AtkinsRéalis.

1.2 Experience

1.2.1 I have over 20 years of experience in planning and environmental roles, with 18 years' experience as an Environmental Consultant in commercial consultancies. My experience as an environmental consultant has primarily been as an Environmental Impact Assessment (EIA) coordinator for infrastructure schemes across a range of sectors including transport, energy, water, commercial and mixed-use developments, and waste, but also includes other experience across the full life cycle of development projects, both in the UK and internationally.

1.2.2 In my current role at AtkinsRéalis, I take the lead for EIA coordination for major infrastructure and development schemes. In addition to the CSET2 scheme (hereafter referred to as 'the Scheme'), other such schemes I have worked on include the Arrow Valley Solar DCO, HyNet Low Carbon Hydrogen Production Plant Phase 1, West Cambridge Masterplan, Wrexham Energy Centre DCO and the Great Western Main Line Electrification. I also provide oversight and review roles for projects where other colleagues are the main EIA coordinator, including recently the Grangemouth Green Hydrogen Plant, and Manchester Central Retail Park. I am also a guest lecturer for three masters degrees at Bangor University providing an introduction to EIA.

1.3 Experience of the Scheme

1.3.1 I am the environmental lead and EIA Coordinator for the Scheme. In this role I was responsible for the drafting of the Environmental Statement which included the review and editing of all of the assessment chapters and associated appendices.

1.3.1 In this capacity, I have provided advice to the design team on the environmental implications for aspects of the design and inputted into stakeholder consultation including both statutory and nonstatutory stakeholders.

1.4 Scope of Evidence

1.4.1 The scope of my evidence is on the overall approach of the assessments undertaken and reported within the Environmental Statement **[CD1-10.02]** and accompanying appendices **[CD110.03 to CD1-10.60]**, and the environmental matters dealt with in the On-road Option Technical Note **[CD12-12]**. The scope of my evidence includes the following topics:

1) Noise and vibration – general principles and findings are covered in my evidence (Section 6.2). Specific details are covered in the Written Statement of Vicky Wills (appended at Appendix 1).
2) Water environment – general principles and findings are covered in my evidence (Section 6.3). More specific details on flood risk assessment are covered in the Written Statement of Tom Rouse (appended at Appendix 2), and water quality details are covered in the Written Statement of Roshni Surdevan (appended at Appendix 3).
3) Geology and soils - general principles and findings are covered in my evidence (Section 6.4). More detailed analysis of hydrogeology is set out in the Written Statement of Katie Bristow (appended at Appendix 4).
4) Historic environment – general principles and findings are covered in my evidence (Section 6.5). More detailed analysis is set out in the Written Statement of Alan Ford (appended at Appendix 5).
5) Population and human health - covered in my evidence (Section 6.6).
6) Traffic and transport - covered in my evidence (Section 6.7).
7) Climate vulnerability - covered in my evidence (Section 6.8).

8) Waste and resources - covered in my evidence (Section 6.9).

9) Cumulative effects - covered in my evidence (Section 6.10).

1.4.2 The following environmental matters are covered in other experts Proofs of Evidence as follows:

1) Biodiversity - covered in Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01]**.

2) Landscape and visual impact – is addressed in Ms Macleod's Proof of Evidence **[CD27-01 APP-W8-01]**.

3) Greenhouse gas emissions and air quality - covered in Ms. Sykes' Proof of Evidence **[CD2701 APP-W6-01]**.

1.4.3 In addition to the findings of the ES **[CD1-10.02]** and associated appendices **[CD1-10.03 to CD110.60]**, my Proof of Evidence also provides my response to issues concerning environmental effects of the Scheme that are raised in three Statements of Case of consultees to the Scheme, the BW4B Consortium **[CD3-23]**, GCSP **[CD3-20.01],** and Hobson's Conduit Trust **[CD3-26]**.

1.4.4 With regards to the Statement of Matters dated 19 October, the following matters are either wholly related to my Proof of Evidence or partially related to my Proof of Evidence and also covered by the Proofs of Evidence of others as set out below.

Statement of Matters dated 19 October Reference	**Statement of Matters dated 19 October Text**	**Coverage through my Proof of Evidence**	**Coverage through the Proofs of Evidence of Others**
3	The main alternative options considered by CCC and the reasons for choosing the preferred option set out in the Order. The cost of the Scheme and overall benefits.	I will describe how the ES has reported alternatives including a description of the reasonable alternatives studied and the main reasons for selecting the preferred option. I will also describe how the environmental matters were assessed in relation to the On-road Option Technical Note **[CD12-12]**	The rationale for the preferred option and the consideration of alternatives is covered in Mr Baker's Proof of Evidence **[CD2701 APP-W2-01]** and Ms Diamant's Proof of Evidence **[CD27-01 APPW3-01].**
4.	The effect of the implementation, operation and maintenance of the Scheme.		

Statement of Matters dated 19 October Reference	Statement of Matters dated 19 October Text	Coverage through my Proof of Evidence	Coverage through the Proofs of Evidence of Others
4. a)	The potential environmental impact of the proposed activities, including but not limited to the impact on drainage, Green Belt land, air pollution, material use, biodiversity, habitats and wildlife, with particular reference to the Granta Chalk Stream, Hobson's Conduit chalk stream, Gog Magog Hills landscape, Nine Wells Local Nature Reserve.	I will describe how the ES has reported the potential environmental impact on drainage (Section 6.3), material use (Section 6.9), the non-biodiversity impacts on the River Granta (Section 6.3), Hobson's Conduit (Section 6.3), and the Nine Wells Local Nature Reserve (Section 6.4). My evidence is supported by Ms Bristow's Written Statement (Appendix 4) for hydrogeology issues and Ms Surdevan's Written Statement (Appendix 3) for water quality issues.	The effects of the Scheme on Green Belt land is covered in Ms McDade's Proof of Evidence **[CD27-01 APPW10-01]**. The effects of the Scheme on biodiversity, habitats and wildlife, including the biodiversity effects on the River Granta, Hobson's Conduit, and the Nine Wells Local Nature Reserve are covered in Mr Watson's Proof of Evidence **[CD2701 APP-W5-01].** The effects of the Scheme on the Gog Magog Hills landscape are covered in Ms Macleod's Proof of Evidence **[CD24-01 APPW8-01]**
4. d)	The impact of the proposal on areas of historical or cultural significance	This issue is covered entirely within my Proof of Evidence (Section 6.5) and Mr Ford's Written Statement (Appendix 5).	
4. e)	The implications of the acquisition of arable farmland	This issue is covered entirely within my Proof of Evidence (Section 6.6).	

Statement of Matters dated 19 October Reference	Statement of Matters dated 19 October Text	Coverage through my Proof of Evidence	Coverage through the Proofs of Evidence of Others
4. g)	The potential visual and noise pollution caused by the Scheme	I will describe how the ES has reported the effects of potential noise pollution caused by the Scheme (Section 6.2). My evidence is supported by Ms Wills's Written Statement (Appendix 1).	The effects from potential visual pollution are covered in Ms Macleod's Proof of Evidence **[CD27-01 APPW8-01]**

1.5 Summary of Evidence

1.5.1 My evidence is structured as follows:

1) Section 2 – The main issues relevant to my evidence
2) Section 3 – Environmental Statement
3) Section 4 – Environmental design, alternatives and mitigation
4) Section 5 – Environmental Statement Addendum
5) Section 6 – Main environmental topics
6) Section 7 – Key stakeholder engagement
7) Section 8 – Representations made relevant to my evidence
8) Section 9 – Other issues raised by third parties
9) Section 10 – Conclusions
10) Section 11 – Statement of truth

2. MAIN ISSUES RELEVANT TO MY EVIDENCE

2.1 Introduction

2.1.1 The EIA process has been followed in accordance with Rule 7A of The Transport and Works (Applications and Objections Procedure) (England and Wales) Rules 2006 **[CD4-08]** ("TWA Rules") and the Town and Country Planning Act (Environmental Impact Assessment) Regulations 2017 **[CD4-22]**.

2.1.2 The areas where the assessments reported in the ES are predicted to result in significant effects on the environment are as follows:

1) Construction phase:

I. Adverse noise effects for residents living close to the Scheme during construction. Further detail is set out in Section 6.2 of my Proof of Evidence and Chapter 7 of the ES **[CD1-10.02, pages 88-117].**
II. Loss of agricultural land with Best and Most Versatile soils due to the Scheme and cumulatively with other schemes. Further detail is set out in Section 6.4 of my Proof of Evidence and Chapter 9 of the ES **[CD1-10.02, pages 132-147].**

III. The disposal of significant quantities of inert construction waste to landfill resulting in a loss of existing landfill void capacity. Further detail is set out in Section 6.9 of my Proof of Evidence and Chapter 17 of the ES **[CD1-10.02, pages 319-329]**.
IV. The loss or truncation of sixteen archaeological remains underlying the Scheme. There would be a cumulative impact on one of these archaeological remains due to the impact from the East West Rail scheme. Further detail is set out in Section 6.5 of my Proof of Evidence and Chapter 12 of the ES **[CD1-10.02, pages 237-259]** for the assessment of effects on archaeology and Section 6.10 of my Proof of Evidence and Chapter 18 of the ES **[CD1-10.02, pages 330-348]** for cumulative effects**.**
V. Traffic disruption around Francis Crick Avenue during construction including cumulative impacts from continued development within the Cambridge Biomedical Campus. There could also be significant cumulative effects on traffic disruption along Granham's Road as a result of the East West Rail scheme. Further detail is set out in Section 6.6 of my Proof of Evidence and Chapter 13 of the ES **[CD1-10.02, pages 260-285]** for effects of traffic disruption around Francis Crick Avenue, and Section 6.10 of my Proof of Evidence and Chapter 18 of the ES **[CD1-10.02, pages 330-348]** for cumulative effects.
VI. Local economic benefits during construction from the use of local supply chains for construction materials, plant and equipment, labour, and associated services. Further detail is set out in Section 6.6 of my Proof of Evidence and Chapter 13 of the ES. **[CD1-10.02, pages 260-285].**
VII. Cumulative effects on traffic disruption, the Granta River Valley LCA, loss of agricultural land, and disturbance of archaeology. Further detail is set out in Section 6.10 of my Proof of Evidence, Chapter 18 of the ES **[CD1-10.02, pages 330-348]**, and Chapter 8 of the ES Addendum **[CD1-10.02.1 pages 58-72]**.

2) Operational phase:

I. Adverse noise effects at residential properties along the existing guided busway between Addenbrookes and central Cambridge during operation. Further detail is set out in Section 6.2 of my Proof of Evidence and Chapter 7 of the ES [CD1-10.02, pages 88117].

II. Beneficial effects for walkers, cyclists and equestrians due to the new Emergency Maintenance and Access Track which will also be an active travel path. Further detail is set out in Section 6.6 of my Proof of Evidence and Chapter 13 of the ES **[CD1-10.02, pages 260-285].**

III. Beneficial effects for commercial businesses and local residents due to improved journey reliability and reduced journey times. Further detail is set out in Section 6.6 of my Proof of Evidence and Chapter 13 of the ES **[CD1-10.02, pages 260-285].**

IV. Cumulative adverse effects on the Granta River Valley LCA. Further detail is set out in Section 6.10 of my Proof of Evidence, Chapter 18 of the ES **[CD1-10.02, pages 330348]** and Chapter 8 of the ES Addendum **[CD1-10.02.1 pages 58-72]**.

2.1.3 Where adverse environmental effects have been identified, these have either been minimised through the design or mitigated as far as reasonably practical. Statutory environmental consultees have confirmed that they are satisfied that appropriate mitigation has been identified and incorporated via Statements of Common Ground (Historic England **[CD23-03]** and the Environment Agency **[CD23-01]**) or in making Written Representations (Natural England **[CD2REP-05]**).

3. ENVIRONMENTAL STATEMENT

3.1 Introduction

3.1.1 This section of my evidence sets out the process for how the EIA was undertaken and how the ES was produced in accordance with the requirements described in the TWA Rules **[CD4-08]**. The findings of the assessments are described in Section 6.

3.2 Scheme Description

3.2.1 The Scheme is an 8.5 km new guided busway between the A11 / A1307 junction and Francis Crick Avenue. At the southern end of the proposed alignment will be a new Travel Hub with parking for 1250 cars and active travel facilities. For the length of the guided busway, the Scheme includes an adjacent emergency and maintenance access track which will also serve as an active travel path for walkers and cyclists. The Scheme also includes a landscaped area which serves to provide mitigation for landscape and visual impacts, biodiversity impacts, and surface water drainage infrastructure. The landscaped area also provides substantial Biodiversity Net Gain (BNG).

3.2.2 A detailed description of the Scheme which forms the basis of the assessments reported in the ES is described in Chapter 2 of the ES **[CD1-10.02, pages 13-37]**. The description of the Scheme is set out in three parts which are:

1) The Scheme design: including the design parameters which allow for flexibility within the detailed design. This enabled the worst-case scenario to be identified within the ES and assessed within the impact assessments in order to ensure that the assessment findings are robust.

2) Construction phase: which details the programme, phasing, site accesses, temporary watercourse crossings, plant and equipment, materials, and construction methods.

3) Operational phase: which details the bus type (e.g. diesel hybrid running on diesel along the busway and electric in built up areas), services, patronage, hours of operating, maintenance, and any other operating parameters used as a basis for the assessments.

3.3 Method

3.3.1 The overall scope of the EIA was agreed via a scoping exercise, which determined which environmental topics are of relevance to the Scheme and what the potential likely significant effects could be which required further investigation and assessment. A request for a Scoping Opinion from the Secretary of State **[CD1-10.12]** was made by the Applicant on 15 October 2020, in accordance with the Rules **[CD4-08]**, and a Scoping Opinion was adopted by the Secretary of State on the 27 November 2020 **[CD1-10.12]**. The Scoping Opinion sets out the environmental matters which the Secretary of State considers relevant in determining the application for the TWAO (hereafter referred to as “the Order”) which should be included within the ES. The assessments were carried out in accordance with the Scoping Opinion **[CD1-10.12]**. The Scoping Opinion required the following environmental topics to be scoped in and assessed in detail:

1) Air quality – assessed in Chapter 6 of the ES [CD1-10.02, pages 63-87]

2) Biodiversity – assessed in Chapter 10 of the ES [CD1-10.02, pages 148-190]

3) Climate change – assessed in Chapters 15 and 16 of the ES [CD1-10.02, pages 302-318]

4) Community and human health – assessed in Chapter 13 of the ES [CD1-10.02, pages 260285]

5) Historic environment – assessed in Chapter 12 of the ES [CD1-10.02, pages 237- 259]

6) Landscape and visual – assessed in Chapter 11 of the ES [CD1-10.02, pages 191- 236]

7) Noise and vibration – assessed in Chapter 7 of the ES [CD1-10.02, pages 88-117]

8) Land use and land take – assessed in Chapter 13 of the ES [CD1-10.02, pages 260-285]

9) Policies and plans – included within each of the assessment chapters 6 to 18 inclusive [CD1-

10) 10.02, pages 63-348]

11) Soils, geology, and contaminated land – assessed in Chapter 9 of the ES [CD1-10.02, pages 132-147]

12) Water resources and flood risk – assessed in Chapter 8 of the ES [CD1-10.02, pages 118131]

13) Traffic and transport – assessed in Chapter 14 of the ES [CD1-10.02, pages 286-301]

14) Resources and waste – assessed in Chapter 17 of the ES [CD1-10.02, pages 319-329]

3.3.2 It was agreed that major accidents and disasters would not be relevant to the Scheme and this matter was scoped out **[CD1-10.11, pages 101 and CD1-10.12, page 2]**. Following submission of the TWAO application, National Gas Transmission Plc (NGT) submitted a Statement of Case SoC **[CD3-21 OBJ-370]** which raised concerns on the impact of the Scheme on their highpressure gas pipeline. NGT's concerns have been addressed through the diversion of part of the pipeline, the inclusion of protective matting adjacent to the pipeline, and the design changes to the travel hub and access which were explained in more detail in the change request **[CD24-04]**. As the potential for a major accident to occur at NGT's pipeline from the Scheme has been avoided through the design change, any possible significant effects have been avoided through embedded mitigation, confirming that an assessment on major accidents and disasters can continue to be scoped out. The environmental impact of the amendments to the Scheme included in the change request have been considered in the addendum to the Environmental Statement **[CD24-04]**.

3.3.3 The basic method for identifying likely significant effects employed in the ES is set out in Chapter 5 of the main ES report **[CD1-10.02, pages 59-62].** The approach is based on the premise that all environmental effects arise from an interaction between an environmental receptor and an impact as per the following four stages:

1) The first stage is to identify all of the relevant environmental receptors within the defined study area, the extent of which varies between topics. Each receptor is assigned a sensitivity or value based on the applicable guidance for each particular environmental topic.

2) The second stage is to identify the impacts from the Scheme which could interact with each receptor. Each impact is assigned a magnitude rating based on a range of factors defined by the applicable guidance for each environmental topic.

3) The third stage is to identify any mitigation that could reduce the magnitude of the impact. Mitigation is based on the mitigation hierarchy as described in Chapter 5 of the **ES [CD1-10.02, page 61]**.

4) The fourth stage is to determine any effect significance by combining the receptor sensitivity with the impact magnitude based on a Leopold matrix. The Leopold matrix varies slightly between each chapter as required by the applicable guidance.

3.3.4 Each of the assessment chapters in the ES **[CD1-10.02, pages 55-339]** has a Method section (sub-section 3 of each assessment chapter 6 to 18 inclusive) which sets out a more detailed description of the assessment method for each specific topic, including the guidance followed, the criteria for determining receptor sensitivity and impact magnitude, and the Leopold matrix used to determine effect significance.

4. ENVIRONMENTAL DESIGN, ALTERNATIVES AND MITIGATION

4.1 Scheme Design

4.1.1 The design of the Scheme has been developed to minimise adverse effects on the environment as far as possible in line with the mitigation hierarchy as set out in the Design Manual for Roads and Bridges (DMRB) LA104 **[CD17-09, page 19]** which is a National Highways standard that provides broad guidance for the environmental assessment of schemes. This includes the integration of the Scheme within the landscape as far as possible through the landscape design and deliberate planting of hedgerows, blocks of woodland and scattered trees.

4.1.2 The alignment of the busway has been refined and optimised to minimise environmental effects without compromising the performance of the busway. The design evolution of the busway is explained in the below section on alternatives (Section 4.2).

4.1.3 The design of the two bridges crossing the River Granta at Stapleford, and Babraham have been optimised to balance a range of competing interests. The two bridges' dimensions have been minimised to limit visual impacts, impacts to landscape character and the amount of material required for construction to minimise embedded carbon. Primarily the bridges need to carry the busway over the River Granta safely at these two locations without increasing flood risk to third party land. These requirements have dictated the minimum length of the bridge. The bridge heights have been set to allow the landowner to pass underneath to access agricultural land with farm vehicles, and to minimise impacts on bats that use the River Granta as a commuting and foraging corridor.

4.2 Alternatives

4.2.1 Chapter 4 of the ES **[CD1-10.02, pages 50-58]** sets out the alternatives that have been assessed in order to identify a preferred option. The main alternatives to the Scheme were short listed from an initial long list of 49 options. This sifting process identified three main strategies, as follows:

1) Strategy 1 – Guided Busway via Sawston with A11 Park and Ride
2) Strategy 2 – On highway bus lanes with A11 Park and Ride plus bus only link to Cambridge Biomedical Campus (also referred to as the On-road Alternative)
3) Strategy 3 – On highway bus lanes with A11 Park and Ride

4.2.2 Consultation was undertaken on the three strategies which identified a preference for Strategy 1. It was acknowledged that Strategy 1 would likely have greater environmental impacts than Strategies 2 or 3, but the economic benefits of Strategy 1 were significantly higher than the other strategies, and it would also result in the highest modal shift from car journeys to public transport. Strategy 1 was developed as a preliminary design into the Scheme.

4.2.3 A further, more detailed, comparison between the Scheme and the On-road Alternative was undertaken in 2023 and updated in 2025 **[CD12-12, pages 25-29]**. The assessment considered the environmental effects of the Scheme and the On-road Alternative and concluded that there would be different environmental effects from each option. The Scheme performed better than the On-road Alternative on the following environmental criteria:

1) Habitat value as the landscape design for the Scheme results in a significant increase in Biodiversity Net Gain. The On-road Alternative also had the potential to disrupt bat commuting routes at the A1307 / Haverhill Road junction **[CD12-21].**
2) Human health as the Scheme provides a new segregated active travel path promoting active travel.
3) Users of Public Rights of Way as the new active travel path provided by the Scheme provides new connectivity within the existing public rights of way network.

4.2.4 The On-road Alternative performed better on the following criteria:

1) Impacts to surface water courses as the Scheme crosses Hobson's Conduit, the River
2) Granta and unnamed field drains which will have an increased risk of receiving pollutants.
3) Loss of Best and Most Versatile (BMV) soils as the Scheme will require a larger area of land take than the alternative option.
4) Impacts to landscape character and visual receptors as the Scheme would be a new linear feature within the landscape.
5) Impacts to archaeology as the increased footprint of the Scheme has a greater potential for disturbing archaeology than the alternative option.
6) Impacts to agricultural businesses as the Scheme requires an increase in land take than the alternative option and requires new farm access to prevent severance.
7) Greenhouse gas emissions as the Scheme requires more construction materials than the alternative option resulting in higher embedded carbon emissions.

8) Waste and materials as the Scheme requires more construction materials than the alternative option increasing the use of raw materials and potential for waste generation.

4.2.5 For all other environmental criteria, both options performed similarly. Environmental effects formed only part of the wider appraisal which also considered transport outcomes, value for money, modal shift and strategic objectives. The Scheme was confirmed as the preferred option due to providing better value for money than the On-road Alternative (benefit cost ratio (BCR) of 1.53 compared to a BCR of 0.48 for the On-road Alternative), provision of an active travel route providing a safer route for cyclists than the On-road Alternative **[CD12-12 page 38]**,

4.2.6 Further detail on the alternatives assessed and the reasons for selecting the Scheme as the preferred option are set out in Mr Baker's Proof of Evidence **[CD27-01 APP-W2-01].**

4.3 Approach to Mitigation

4.3.1 The approach to mitigation was in accordance with the principles of the mitigation hierarchy, i.e. avoid the impact if possible, reduce the impact if avoidance is not possible, restore conditions after the impact if reduction is not possible, and offsetting impacts as a last resort.

4.3.2 The mitigation measures to avoid or reduce impacts are described in Section 4.1 above where they have been embedded in the Scheme design. Additional mitigation measures to avoid or reduce impacts have been identified, primarily for the construction phase, where mitigation measures relate to construction management, process and methods and are independent from design. Restoration is required for the areas of temporary land take required for the construction areas outside of the permanent Scheme boundary. The landscape design also includes areas of habitat that will be restored or compensate for lost habitat.

4.3.3 A full schedule of the proposed mitigation measures is set out in the Register of Environmental Actions and Commitments (REAC) **[CD1-10.10].** Mitigation relating to specific aspects of the environment are set out in more detail in under the relevant Mitigation headings in Section 6 below.

5. ENVIRONMENTAL STATEMENT ADDENDUM

5.1.1 The Environmental Statement Addendum **[CD1-10.02.01]** updates the main ES **[CD1-10.02]** to reflect the changes to the design. The purpose of the design changes is covered in Mr Connelly's Proof of Evidence **[CD27-01 APP-W9-01]** and is not discussed further in my Proof of Evidence. Section 6 of my Proof of Evidence incorporates the findings of the ES Addendum into the rest of the ES findings.

6. MAIN ENVIRONMENTAL TOPICS

6.1 Introduction

6.1.1 The scope of my Proof of Evidence covers all relevant environmental issues with the following exceptions which are covered by others

1) Construction, including method and mitigation which is covered by Mr Connelly's Proof of Evidence **[CD27-01 APP-W9-01]**

2) Landscape and visual which is covered by Ms Macleod's Proof of **Evidence [CD27-01 APPW8-01]**

3) Carbon and air quality which is covered by Ms Sykes's Proof of Evidence **[CD27-01 APPW6-01]**

4) Traffic and transport modelling which is covered by Mr Shipley's Proof of Evidence **[CD27-01 APP-W4-01]**

5) Biodiversity including impacts to wildlife and habitats, which is covered by Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01]**

6.2 Noise and Vibration

6.2.1 The Written Statement for noise and vibration is set out in Appendix 1. The following sections under heading 6.2 summarise the Written Statement and also make reference to Chapter 7 Noise and Vibration in the ES **[CD1-10.02, pages 88 to 117].**

Scope

6.2.2 The scope of the noise and vibration assessment included potential noise and vibration impacts during construction caused by construction activities within the Order Limits, and from construction traffic travelling to and from the Scheme. For the operational phase, the scope of the noise and vibration assessment included noise and vibration impacts caused by changes in traffic flows across the existing highway network including the new proposed bus services, buses travelling along the Scheme busway, and traffic at the Travel Hub.

Method

6.2.3 The method for assessing construction noise and vibration from construction activities within the Order Limits was undertaken in accordance with BS 5228 Parts 1 and 2 **[CD25-01 and CD25-02]** and DMRB LA 111 **[CD17-08].** Noise and vibration effects from construction traffic were assessed in accordance with the method set out in the Calculation of Road Traffic Noise (CRTN) **[CD13-21].** The assessment of noise and vibration effects during operation was assessed using the method set out in the Design Manual for Roads and Bridges (DMRB) LA 111 **[CD17-08].**

Baseline

6.2.4 Baseline noise conditions vary throughout the study area and are dependent on the proximity to the main noise sources. For the Scheme, the main sources of background noise are road traffic noise, notably from the A11, A1307, A1301, and local roads, and the railway line. A baseline noise survey was undertaken at various representative locations across the study area and determined that away from roads and the railway line, baseline noise levels were generally below 55 dBA during the daytime, and below 40 dBA during nighttime. Noise levels increased up to 70 dBA at locations close to noise sources.

6.2.5 Noise receptors include residential properties within close proximity to the Scheme, residential properties along existing highways which new bus services will use, and commercial and research-based properties that are sensitive to vibration within the Cambridge Biomedical Campus.

Environmental Effects

Construction Phase

6.2.6 During construction, the noise and vibration assessment identified three locations where there would potentially be significant noise effects at residential properties. These are:

1) Residential properties along Hinton Way
2) Residential properties along Haverhill Road
3) Residential properties along Sawston Road

6.2.7 At all three locations, construction noise impacts will be reduced to not significant by utilising a range of best practice construction mitigation measures, which could include minimum distances between property curtilages and noisy construction activities. Mr Connelly's Proof of Evidence provides further detail **[CD27-01 APP-W9-01 page 21]**. No significant vibration effects are predicted to arise during construction.

Operational Phase

6.2.8 During operation, noise from buses travelling along the busway would be a new noise source in a currently quiet rural setting. The baseline noise conditions at residential properties in these areas are quiet and so the increase in noise caused by the Scheme would not exceed the Significant Observed Adverse Effect Level ("SOAEL") which would otherwise result in significant effects.

6.2.9 Beyond the Order Limits in urban areas, significant adverse effects are predicted to arise at residential properties within close proximity to the existing road links, including the existing guided busway, which the bus services will travel along. At these locations, noise increases will be small, between 1-3 dBA but because they are within an urban environment with already high background noise, this small increase is enough to result in exceedances of the SOAEL resulting in significant effects.

Proposed Mitigation

6.2.10 There are a range of mitigation measures available during construction which constitute best practice and are set out in the ES **[CD1-10.02]** as mitigation measures NV1 to NV6 inclusive to ensure that construction phase impacts are not significant.

6.2.11 Acknowledging that the busway would introduce a new noise source in close proximity to residential properties, there are five locations where noise attenuation measures have been incorporated into the design as set out in mitigation measure NV8 in the ES **[CD1-10.02, page 117].** These comprise acoustic fences and earth bunds of various heights and lengths. The busway is also specified as being paved with a low noise surface in the form of a Thin Surface Course System as set out in mitigation measure NV7 in the ES **[CD1-10.02, page 117].**

6.2.12 The predicted significant noise effects during operation all occur away from the Order Limits and there are no readily available mitigation measures for these effects that can be included in the Scheme design. Whilst significant due to the exceedance of the SOAEL, the increase in noise would be barely perceptible (see Appendix 1 for further detail).

Conclusion

6.2.13 There are predicted to be significant residual environmental effects due to small increases in noise limited to properties along existing roads and the existing guided busway which the new bus services would travel along. The predicted increase in noise as a result of the Scheme is relatively small at between 1.0 and 2.9 dB. 1 dB is the smallest change in road traffic noise that is considered perceptible in the short term, and 3 dB is the smallest change that is considered perceptible in the long term (see Appendix 1, page 6). However, this would result in an exceedance of the significant adverse effect threshold of 66 dB due to the existing high background noise levels.

6.2.14 No other significant adverse noise or vibration effects are predicted during construction or operation.

6.3 Water Environment

6.3.1 This section of my Proof of Evidence is supported by the Written Statement from Ms Surdevan for issues relating to water quality, and from Tom Rouse for issues relating to flood risk. These are both appended in Appendix 3 and 2 respectively.

Scope

6.3.2 The scope of the water environment assessment covers flood risk impacts and water quality impacts.

Method

6.3.3 The assessment of impacts on water quality was undertaken in accordance with the DMRB LA 104 **[CD17-09]** and LA 113 **[CD17-13]** and from CIRIA C753 (The SUDS [Sustainable Urban Drainage Systems] Manual) **[CD19-02]**. The flood risk assessment has been undertaken in accordance with guidance set out in the National Planning Policy Framework **[CD11-01]**, Cambridgeshire Flood and Water Supplementary Planning Document **[CD10-03]**, and the UK Government's Flood Risk and Coastal Change Guidance Scheme **[CD19-07]**. Defra's Flood Risk Assessment Climate Change Allowances **[CD19-05]** were used to inform the flood risk assessment to ensure that future predicted changes in flood risk were accounted for. The study area included all surface water bodies within 1 km of the Order Limits **[CD1-10.02, page 119]**.

Baseline

6.3.4 Within the study area, there is one Main River, the River Granta, which crosses the Scheme at two locations, Babraham and Stapleford. There is one named Ordinary Watercourse, Hobson's Conduit, which is crossed by the Scheme to the west of Nine Wells Local Nature Reserve. There are an additional 56 unnamed Ordinary Watercourses within the study area, mostly field drains, four of which are within the Order Limits.

6.3.5 Areas of flood zones 2 and 3 are associated with the River Granta extending between 200 m to 500 m either side of the river depending on topography. At the time of the assessment in the ES, there was an area of flood zone 3 associated with Hobson's Brook, downstream of the Scheme, and with the unnamed watercourse south of Dame Mary Archer Way as shown on Figure 8.1 in the ES **[CD1-10.02, page 123]**. The Environment Agency mapping has since been updated, and these areas are no longer shown to be in flood zone 3. Appendix 2 provides further detail.

Environmental Effects

Construction Phase

6.3.6 As with any construction site close to surface water bodies, there is a potential risk of pollution from surface water drainage resulting in contamination of the water body. However, in this case these impacts are readily mitigated through the implementation of standard best practice measures set out in mitigation measures WE1 to WE10, inclusive, in Section 8.6 of the ES **[CD110.02, pages 129-131]**.

6.3.7 Additional mitigation measure WE8 has been identified in the ES Addendum **[CD1-10.02.01, page 16]** to ensure that impacts from temporary dewatering, if required whilst the bridge foundations are constructed, do not result in significant adverse effects during construction.

Operation Phase

6.3.8 During operation, surface water from the busway will drain, via swales, to attenuation ponds prior to discharging to Hobson's Brook and the River Granta. The attenuation ponds will have additional water quality treatment in the form of reed bed filtration. The preliminary drainage design allows for any necessary pollution prevention measures, as per the SUDS manual **[CD1902]**, to ensure that there would be no significant adverse effects on water quality. Condition 15 of the deemed planning permission requires approval of these measures at the detailed design stage. The SUDS measures within the drainage design would minimise non-soluble pollutants including oils, suspended sediment and other non-soluble particles but would not remove soluble pollutants.

6.3.9 The drainage strategy would mitigate for soluble pollutants, such as de-icing salt, through attenuation and the slow discharge of surface water drainage which would avoid sharp rises in pollutant concentrations and minimise harm to aquatic habitats and species. The reed beds within the attenuation ponds will reduce soluble pollutants but will not completely remove them. As set out in Ms Surdevan's Written Statement (Appendix 3), water quality monitoring of Hobson's Conduit shows that the soluble pollutants discharged into the watercourse from existing drainage outfalls, are quickly diluted and pass through the system.

6.3.10 Significant changes in flood risk have been avoided through the bridge design which spans the majority of the flood plain. There are small areas of flood plain where there would be encroachment by the bridge abutments and piers resulting in a small displacement of flood water. At the River Granta (Stapleford) Crossing, there would be a displacement of 37.8 m^3 and at the River Granta (Babraham) Crossing there would be a displacement of 69.1 m^3 based on the upper climate change allowance **[CD1-10.23, page 16]**. At both locations, flood storage compensation has been identified within the Order Limits so that there would be no increase in flood risk to any third-party land.

Proposed Mitigation

6.3.11 Best practice measures for preventing pollution during construction have been proposed in the original ES **CD1-10.02, pages 129-131]** and the ES Addendum **[CD1-10.02.01, page 16].**

6.3.12 The drainage design is set out in the Drainage Strategy **[CD1-10.04]** and follows the principles of the SUDS hierarchy which integrates pollution prevention and attenuation measures into the drainage design. The preliminary design includes attenuation ponds which provide storage to attenuate discharge flows to greenfield rates and avoids increasing flood risk. The ponds also enable some treatment through biological processes which will help to break down pollutants and also allow suspended particles to settle. For the majority of the Scheme, drainage water is collected and conveyed via grass lined swales which run parallel to the busway. These provide additional surface water storage for attenuation purposes and some pollution control via filtration. The design is capable of additional treatment measures such as reed beds which can be included at the detailed design stage.

Conclusion

6.3.13 There are not predicted to be any significant residual effects relating to the water environment during either the construction or operational phases.

6.4 Geology and Soils

Scope

6.4.1 The scope of the geology and soils assessment includes contamination impacts to soils and groundwater, disruption of flows to groundwater, and the loss of agricultural soils.

Method

6.4.2 The geology and soils assessment was undertaken in accordance with DMRB LA 104 **[CD17-09]** and DMRB LA 109 **[CD17-10].**

Baseline

6.4.3 The Scheme is underlain by chalk bedrock and alluvium and river terrace deposits associated with flooding within the historic flood plains of the River Granta. The superficial deposits hold groundwater classed as Secondary A aquifers and the chalk bedrock holds groundwater designated as Primary aquifer.

6.4.4 Eighty-six hectares of land within the Order Limits is classified as Agricultural Land Classification ("ALC") Grade 2 and 3a soils, which designations are considered Best and Most Versatile.

6.4.5 For the majority of the Site, there are no identified areas of existing contamination as it is undeveloped greenfield land. There are three historical landfill sites within 30 m of the Site, and some minor contamination was observed in close proximity to these. Recorded exceedances were low and for some observed metal exceedances determined to be natural rather than sources of contamination.

Environmental Effects

Construction Phase

6.4.6 Risks of pollution to soils and groundwater are typical across most construction sites and there are a range of standard best practices that would avoid or minimise any risk of pollution. These are set out in Section 9.6 of the ES **[CD1-10.02, pages 146-147]** and there are not predicted to be any significant effects.

6.4.7 The risks to human and environmental receptors from potential contamination associated with the three historical landfill sites has been determined to be low to very low and easily mitigatable using a range of standard best practices mitigation measures **[CD1-10.02, pages 146-147]**.

6.4.8 There would be a permanent loss of 50 ha of land constituting Best and Most Versatile (BMV) agricultural land **[CD1-10.28]**. BMV land is agricultural land with the best potential for agricultural production based on topsoil quality using the Agricultural Land Classification (ALC). The ALC ranks soils using a grading system of 1 to 5 with grade 1 (excellent quality agricultural land) being the best quality soils and grade 5 (very poor-quality agricultural land) being the least productive soils. Grade 3 is further sub-divided into grades 3a (good quality agricultural land) and 3b (moderate quality agricultural land). Soils graded 1 to 3a are considered BMV. Of the 50 ha of land with BMV soils that would be permanently lost, 21 ha are graded 2 (very good quality agricultural land) and 29 ha have been graded 3a soils. Six hectares of land are classified as grade 3b soils which are not considered BMV. This would constitute a significant adverse effect.

6.4.9 There would be a further temporary loss of 36 ha of land with BMV soils which could be restored after construction has completed. The Draft Soils Management Strategy **[CD1-10.06]** sets out the measures required to ensure that the retained topsoils maintain their quality and will be used to restore the temporary land take used during construction.

6.4.10 National Policy **[CD11-01]** seeks to protect BMV land and encourage development on land with lower productive capacity. Natural England's ALC map for the East Region **[CD21-11]** shows that all agricultural land to the south east of Cambridge is classified as either grade 2 or grade 3 (the map does not distinguish between grades 3a and 3b) so it would not be possible to develop the Scheme on an alignment that avoided BMV land.

6.4.11 The impact on ground water flows from piling at the two River Granta crossings, and the Hobson's Conduit crossing have been assessed. For all three structures, the piles will not create a continuous barrier, and any groundwater will be able to flow around the piles. The ES has assessed this effect as slight adverse and not significant. The impact of dewatering, if required, whilst constructing the bridge piles has been assessed in the ES Addendum **[CD1-10.02, page 13]**. Additional mitigation measure GS7 has been identified to ensure that no significant effects would arise to groundwater.

6.4.12 Groundwater flows at the Hobson' Conduit crossing are particularly sensitive due to the springs at Nine Wells which form the head waters to the Hobson's Conduit. Any significant disruption to the chalk aquifer could result in a loss of flow to the Hobson's Conduit. As set out in Section 9.4 of the ES **[CD1-10.02, pages 136-142]** the groundwater feeding the springs at Nine Wells comes from the Zig Zag Chalk strata which underlies the adjacent Gog Magog Hills. Rainwater falling on the Gog Magog Hills soaks into the chalk downwards until it reaches the lower permeability Totternhoe Stone. Due to the lower permeability, groundwater then flows along the base of the Zig Zag Chalk until it surfaces at Nine Wells. This is shown on the British Geological Society (BDS) mapping on Figure 2-3 of the Ground Investigation Report **[CD1-10.26, page 12]**. The ground investigation undertaken by Tetra Tech drilled six boreholes (BH-PTR-05, BH-PTR-06B, BH-PTR-07, BH-PTR-08, BH-PTR-09, and BH-PTR-10) in the vicinity of the proposed Hobson's Conduit crossing as shown on Figure 5-3 in the Ground Investigation Report **[CD1-10.26, page 23].** The logs for these boreholes **[CD1-10.27C1, pages 35 to 41]** show that the underlying bedrock is West Melbury Marly Chalk corresponding to the BGS maps as shown on Figure 5-5 in the Ground Investigation Report **[CD1-10.26, page 25]**. As shown on the BGS map, the West Melbury Marly Chalk is a different geological unit from the Zig Zag Chalk and separated by lower permeability Totternhoe Stone. Ground water underlying the Hobson's Conduit bridge is distinct from the groundwater feeding the springs at Nine Wells. The minor effect on groundwater from piling the foundations for the Hobson's Conduit crossing assessed in the ES, would have no effect on the groundwater flows at Nine Wells.

Operation Phase

6.4.13 The presence and operation of the Scheme is not predicted to cause any further impact to soil or geological resources.

Proposed Mitigation

6.4.14 BMV soils would be retained and managed through construction as set out in the Draft Soils Management Strategy **[CD1-10.06]**. This would be developed at detailed design for approval by the local authority. Retained top soils would be used to restore the areas of the Site under temporary use during construction and handed back to the landowner.

6.4.15 As set out above in Section 6.3, pollution risks from construction activities are readily mitigatable through the use of best practices measures and the adherence to applicable Pollution Prevention Guidelines. These are set out in the ES in Section 9.6 **[CD1-10.02, pages 146-147]** and the draft Construction Environmental Management Plan (CEMP) **[CD1-10.08]**. The draft CEMP would be further developed during detailed design for approval by the local authority.

Conclusion

6.4.16 The permanent loss of 50 ha and temporary loss of 36 ha of BMV land would be a significant adverse effect.

6.5 Historic Environment

6.5.1 This section of my Proof of Evidence is supported by the Written Statement from Mr Ford in Appendix 5.

Scope

6.5.2 The scope of the historic environment assessment considers potential impacts on archaeological remains, listed buildings, conservation areas, and registered parks and gardens within the zone of influence of the Scheme. Both direct physical impacts and indirect effects on the setting of heritage assets have been assessed.

Method

6.5.3 The assessment was carried out in accordance with DMRB LA 104 **[CD17-09]** and DMRB LA 116 **[CD17-14]**.

Baseline

6.5.4 The Granta Valley is an area of high archaeological potential, with evidence of prehistoric, Roman, and medieval activity recorded in previous investigations. Trial trenching confirmed the presence of 29 buried archaeological remains within the Order limits.

6.5.5 There are no built heritage assets within the Order limits. There are 27 listed buildings within 500 m of the Scheme; two registered parks and gardens, Sawston Hall and Pampisford Hall, are located within the wider study area, approximately 1.2 km and 1.8 km from the route respectively. No conservation areas lie within the footprint of the Scheme, but the Stapleford and Babraham conservation areas are located within 500 m of the Scheme.

Environmental Effects

Construction Phase

6.5.6 Construction will result in the permanent removal of archaeological remains where the busway, structures, and associated earthworks intersect buried deposits. This includes areas of confirmed archaeological sensitivity at Stapleford and Babraham, where trial trenching revealed significant features. The scale of ground disturbance required for bridge foundations, drainage features, and landscaping will exacerbate this impact. The effect is assessed as a major adverse effect.

Operation Phase

6.5.7 The introduction of new infrastructure, including two major bridges over the River Granta and the A11 Travel Hub, has the potential to alter the setting of nearby listed buildings and registered parks and gardens. However, these effects are assessed as slight adverse and not significant due to separation distances of at least 120 m for the closest listed building (Dovecote at Granham's Farm) and intervening vegetation. The visual prominence of the proposed structures is limited by design refinements and landscape integration.

Proposed Mitigation

6.5.8 A programme of archaeological investigation has been set out and agreed with Historic England and the County Archaeologist in the Heritage Mitigation Strategy **[CD1-27]**. This will include strip, map, and sample excavation in areas of high potential, targeted excavation of significant features, and a watching brief during groundworks in less sensitive areas. Recovered artefacts and records will be processed, analysed, and archived in a publicly accessible repository to ensure that the knowledge value of the resource is preserved.

6.5.9 Planting incorporated within the landscape design, described above in Section 4, will reduce setting impacts on heritage assets as far as possible by integrating the Scheme into the landscape and by screening sensitive views.

Conclusion

6.5.10 Significant adverse effects are predicted to archaeological remains buried under the Scheme and mitigation has been agreed with Historic England and the County Archaeologist. These will be lost or truncated during construction. No further significant adverse effects are expected during operation.

6.6 Population and Human Health Assessment

Scope

6.6.1 The scope of the population and human health assessment includes the potential effects of the Scheme on local communities, including impacts on access, amenity, and health determinants such as air quality, noise, and active travel opportunities. It also addresses distributional impacts on vulnerable groups and evaluates the potential benefits of improved public transport and active travel infrastructure. The scope includes residential properties, businesses, community facilities, and healthcare services, as well as users of public rights of way ("PRoW") and recreational spaces.

Method

6.6.2 The population and human health assessment was undertaken with reference to DMRB LA 112 **[CD17-15]**, and IEMA's (now called ISEP) guidance on Determining Significance for Human Health in Environmental Impact Assessment **[CD11-29]**.

Baseline

6.6.3 The study area includes the villages of Great Shelford, Stapleford, Sawston, and Babraham, which collectively accommodate approximately 14,500 residents. These communities are characterised by high levels of car dependency due to limited public transport options and congestion along the A1307 corridor.

6.6.4 The Cambridge Biomedical Campus ("CBC"), located at the northern end of the Scheme, is a major employment and healthcare hub, including Addenbrooke's Hospital, Royal Papworth Hospital, and AstraZeneca headquarters. Access to the CBC is currently constrained by traffic congestion, which affects journey time reliability for staff and emergency services.

6.6.5 The PRoW network provides local connectivity for walkers, cyclists, and horse riders, but severance caused by major roads and limited crossing facilities reduces accessibility. Recreational spaces and community facilities are concentrated within village centres, with schools located in Great Shelford and Sawston.

Environmental Effects

Construction Phase

6.6.6 The temporary and permanent loss of land will impact farm businesses which currently use the land for agricultural production. The loss of land would reduce the earning potential of the farms. For all of the affected landowners the assessment has determined that the farm businesses would remain commercially viable. Issues of severance and access restrictions have been addressed through the Scheme design through the inclusion of specific landowner accesses and busway crossings. Where the Scheme results in loss of land, appropriate compensation will be made. In the first instance, this will be through voluntary agreement and where agreement cannot be reached, via the relevant statutory process. Further details on the progress and status of negotiations with affected landowners are set out in Mr Franklin's Proof of Evidence **[CD27-01 APP-W11-01]**.

6.6.7 Construction will require temporary closures and diversions of PRoW, including Bridleway 212/2 between Stapleford and Babraham, Restricted Byway 12/10 between Sawston and Bridleway 212/2, and Footpaths 12/9 and 12/4 near Babraham. These closures will disrupt local connectivity for non-motorised users.

6.6.8 Traffic management measures, including lane closures and temporary signals, will be in place for extended periods at key locations such as Francis Crick Avenue, Granham's Road, and Babraham/Sawston Road. These measures will cause delays for local traffic and may affect access to community facilities and businesses.

6.6.9 The most significant impact identified in the ES relates to emergency access to Addenbrooke's Hospital via Francis Crick Avenue, where prolonged traffic control was assessed as having the potential to impede ambulance response times. This was assessed as a significant adverse effect on health service provision in the ES. Subsequent work on construction management has identified a range of mitigation measures that would ensure ambulance response times are not impacted by the Scheme. These are set out in Mr Connelly's Proof of Evidence **[CD27-01 APPW9-01]**.

6.6.10 Disruption to the local highway network caused by traffic management measures and construction traffic has been assessed as resulting in significant adverse effects on local businesses due to access disruption.

6.6.11 The assessment has identified significant benefits to the local economy due to increased demand for goods and services utilised by the Scheme and its supply chain.

6.6.12 Residents near the works will experience temporary reductions in amenity due to noise, dust, and visual intrusion. While these effects are managed through mitigation, they represent a short-term adverse impact on quality of life. Vulnerable groups, including older residents and those without private transport, may be disproportionately affected by access restrictions.

Operation Phase

6.6.13 During operation, the Scheme will deliver substantial improvements in connectivity which will reduce journey times and improve reliability for commuters and healthcare staff accessing CBC.

6.6.14 The Emergency and Maintenance Access Track will provide a continuous route for walkers, cyclists, and horse riders, reducing severance and promoting active travel. Enhanced public transport and active travel options are expected to deliver positive health outcomes by reducing car dependency, improving air quality, and encouraging physical activity.

Proposed Mitigation

6.6.15 Mitigation measures set out in Section 13.6 of the ES **[CD1-10.02, pages 284-285]** would minimise adverse effects as far as possible. This includes a wide range of measures to minimise construction impacts for air quality, noise, and visual impacts. Additional mitigation measures have been identified to ensure that temporary land required for construction is adequately restored and returned to the landowner, and the diversion of PRoW.

Conclusion

6.6.16 There would be residual significant adverse effects for commercial businesses, residents of properties within the vicinity of the construction works, and health and social care services due to construction impacts. There would also be residual significant benefits to commercial businesses from increased demand in services and goods during construction.

6.6.17 During the operation of the Scheme there would be significant residual benefits for commercial businesses, non-motorised users of public rights of way, and local residents.

6.7 Traffic and Transport

Scope

6.7.1 The scope of the traffic and transport assessment includes the temporary increase in traffic flows during the construction phase and any delays that traffic management would cause during construction. The operational phase assessment considers any forecast changes to traffic flows across the transport network.

Method

6.7.2 The assessment was undertaken in accordance with DMRB LA 104 **[CD17-09]**, DMRB LA 112 **[CD17-15]** and the Institute of Sustainability and Environmental Professionals (ISEP, formerly known as the Institute of Environmental Management and Assessment (IEMA)) Environmental Assessment of Traffic Movement guidance **[CD11-32]**.

Baseline

6.7.3 The baseline assessment has considered all roads predicted to be impacted by construction traffic during the construction phase and the wider highway network during the operational phase.

Environmental effects

Construction Phase

6.7.4 The use of temporary traffic management measures during construction has been predicted to result in neutral to slight adverse and not significant effects to existing users of the highway network with the exception of Francis Crick Avenue which was assessed as moderate adverse and significant. The ES **[CD1-10.02, page 298]** identified the effect at Francis Crick Avenue as being significant due to the potential disruption of a blue light route associated with the hospital. Mr Connelly's Proof of Evidence **[CD27-01 APP-W9-01]** sets out the measures that would be implemented during the construction phase to demonstrate that there would be no impact on the blue light route**.**

Operational Phase

6.7.5 During the operational phase of the Scheme there would be changes to travel patterns across the local highway network that would result in slight adverse to slight beneficial effects, none of which would be significant. These result from small increases or decreases in forecast traffic flows at modelled road links.

Proposed Mitigation

6.7.6 A Construction Traffic Management Plan would be produced by the appointed Contractor at the detailed design stage which would set out how construction traffic will be managed to minimise effects on the highway network. As stated in paragraph 6.7.4 this would include measures to ensure that the blue light route along Francis Crick Avenue would be maintained to avoid disruption to ambulances accessing the hospital.

Conclusions

6.7.7 The ES identified a single significant adverse effect to the blue light route along Francis Crick Avenue during construction. Further work has been undertaken on this issue, and it is not considered to be a significant effect with the implementation of the measures set out in Mr Connelly's Proof of Evidence **[CD27-01 APP-W9-01].** These measures will be secured by Condition 9 of the deemed planning application which requires a Construction Traffic Management Plan to be approved in writing by the relevant local planning authority.

6.8 Climate Vulnerability

Scope

6.8.1 The scope of the climate vulnerability assessment includes the resilience of the Scheme to future climate risks over its design life. This includes potential impacts from extreme weather events such as flooding, intense rainfall, heatwaves, drought, and high winds, as well as soil instability and associated geotechnical risks.

Method

6.8.2 The assessment was undertaken in accordance with DMRB LA 114 **[CD17-12]**.

Baseline

6.8.3 The current climate in the Cambridgeshire region is of mild winters and warm summers. Future projections of climate are for hotter and drier summers and warmer and wetter winters on average although there will be extreme events which defy these averages. It is possible but less certain that extreme weather events will increase in frequency and severity. This could include heavy localised rainfall, storms, and heatwaves.

Environmental Effects

Construction Phase

6.8.4 No construction effects have been assessed as there would be an imperceptible change in climate risk from the baseline scenario.

Operation Phase

6.8.5 The Scheme could be vulnerable to flooding during extreme rainfall events, particularly at lowlying sections near the River Granta and Hobson's Conduit. Increased runoff from impermeable surfaces could exacerbate flood risk downstream and lead to water quality issues.

6.8.6 Higher summer temperatures and prolonged heatwaves could accelerate pavement deterioration, leading to rutting and cracking. This would increase maintenance requirements and reduce the operational lifespan of the infrastructure.

6.8.7 Bridges and elevated structures could be exposed to higher wind speeds during storm events, potentially affecting structural stability and safety if not designed to withstand future climate extremes. This could also apply to landscaping where increased storms and wind speeds could cause damage to trees through the loss of limps or uprooting.

6.8.8 Chalk soils and clay-rich subsoils in parts of the route may be susceptible to shrink-swell movements during periods of drought, posing a risk to embankment stability and drainage performance.

Proposed Mitigation

6.8.9 The Scheme incorporates a range of design measures that enhance resilience to future climate conditions. These include robust drainage systems designed to accommodate a 1-in-100-year storm event plus climate change allowance, clear-span bridges that maintain floodplain connectivity, and pavement specifications selected for durability under high-temperature conditions.

6.8.10 Landscaping proposals include species diversity to improve ecological resilience and reduce maintenance requirements. These measures collectively ensure that the Scheme is well-adapted to projected climate scenarios and will continue to function effectively over its 50-year design life. No significant residual effects are predicted.

Conclusion

6.8.11 No significant environmental effects relating to climate vulnerability are predicted.

6.9 Waste and Resources

Scope

6.9.1 The scope of the waste and resources assessment includes the potential impacts of the Scheme on material consumption and waste generation during construction. Operational phase effects were scoped out **[CD1-10.11, pages 111-112 and CD1-10.12, page 2]** as no significant quantities of waste will be generated after construction. The waste and resources assessment addresses the demand for primary construction materials, the generation of excavation arisings and construction waste, and the capacity of local waste management infrastructure to accommodate these materials.

Method

6.9.2 The assessment was undertaken in accordance with DMRB LA 110 **[CD17-16]**.

Baseline

6.9.3 The baseline for the waste assessment comprises the existing landfill and waste management handling capacity within Cambridgeshire. In 2021, landfill capacity was estimated to be approximately 13,000,000 tons and a further 930,000 tons of capacity for waste management handling for non-hazardous waste. The capacity for hazardous waste was estimated to be approximately 150,000 tons **[CD1-10.02, page 322]**.

6.9.4 For material resources, the baseline comprises the quantity of materials available to the market across East of England region and across the whole UK. These figures are shown in Table 17.4 of the ES **[CD1-10.02, page 322].**

Environmental Effects

6.9.5 The Scheme will require substantial quantities of construction materials, including an estimated 752,856 tonnes of aggregates, 61,769 tonnes of asphalt, 35,868 tonnes of concrete, and 2,016 tonnes of steel. This would increase demand for these raw materials although it has been assessed that there is adequate supply within the Cambridgeshire area to meet this increased demand. There would not be a significant effect.

6.9.6 The Scheme is within a Mineral Safeguarding Area ("MSA") and its construction would sterilise the part of the MSA within the Scheme footprint. This would be a very small part of a much wider MSA so would not be a significant adverse effect.

6.9.7 The ES **[CD1-10.02, page 327]** assessed the effect of disposal of 153,582 cubic metres of inert waste, primarily comprising topsoil, subsoil, and weathered chalk. The calculation of the amount of waste that would be generated during the construction of the Scheme has since been updated and is now estimated to be approximately 45,000 m^3 **[CD27-01 APP-W9-01].** This revised volume represents around 0.3% of Cambridgeshire's annual inert landfill capacity, down from the 1.2% reported in the ES **[CD1-10.02, page 327].** This would still exact potential pressure on local disposal facilities if reuse is not maximised, but the effect would be slight instead of large when compared against the criteria set out in Table 17.1 of the ES **[CD1-10.02, pages 321-322]** and would not be significant. Mr Connelly's Proof of Evidence **[CD27-01 APP-W9-01 page 21]** describes how the detailed design of the Scheme would seek to incorporate as much of the excess cut material as possible to ensure that disposal at landfill is an absolute last resort.

Proposed Mitigation

6.9.8 Mitigation measures set out in Section 17.6 of the ES **[CD1-10.02, pages 327-328]** promote the alternative uses for inert waste to avoid disposal at landfill. Use of primary materials will be minimised through the use of recycled or secondary materials. Mitigation measure WR2 sets a 31% target for recycled aggregate in line with regional targets.

Conclusion

6.9.9 At the time that the ES **[CD1-10.02]** was written, a precautionary approach to the assessment was taken which assumed a worst-case scenario that an alternative use for the top soil and other excess cut material could not be found. Further work since the submission of the ES has since confirmed that it is likely that the majority of the excess cut material can be used within the Scheme to avoid a significant adverse effect.

6.10 Cumulative Effects

Scope

6.10.1 The cumulative effects assessment considers the combined impacts of the Scheme with other existing, approved, or planned projects within the study area. It addresses both inter-project cumulative effects, where impacts from multiple schemes overlap in time or space, and intra-project effects, where different environmental topics interact to affect the same receptor **[CD110.02, pages 330-348]**. Due to the passage of time since the submission of the TWAO application, the cumulative effects assessment has been updated and reported in the ES Addendum **[CD1-10.02.01, pages 57 to 71]**.

Method

6.10.2 The assessment was undertaken in accordance with DMRB LA 104 **[CD17-09]** (Environmental Assessment and monitoring (National Highways Standard) and the Planning Inspectorate's guidance in Advice Note 17 on Cumulative Effects Assessment **[CD11-23]**. A total longlist of 74 (62 in the original ES and a further 12 in the ES Addendum) future developments were identified within the study area which was shortlisted to 20 developments (16 in the original ES and 4 in the ES Addendum) that required further assessment for cumulative effects.

Environmental Effects

Construction Phase

6.10.3 Of the 20 shortlisted developments that required assessment, the following five were identified as having the potential to cause significant cumulative:

1) Genome Campus
2) Southwest Travel Hub
3) Land at Newbury Farm
4) East West Rail
5) Cambridge South Station

6.10.4 The assessed significant cumulative effects included a permanent loss of 81.3 ha of best and most versatile agricultural land when the Scheme is considered in combination with the Genome Campus.

6.10.5 A temporary cumulative change in character of the Granta River Valley landscape character area is predicted when the Scheme is considered in combination with the South West Travel Hub, the Land at Newbury Farm (a residential development scheme of 230 dwellings), and the East West Rail Connection Stage 3 developments.

6.10.6 A permanent cumulative loss or truncation of the 08339 Cropmark Complex at Addenbrooke's (known archaeological remains, that are partially underlying the Scheme) due to the construction works for both the Scheme and the Cambridge South Station.

6.10.7 Temporary, cumulative adverse effects caused by disruption to traffic along Granham's Road from the construction traffic accessing both construction compound 6 of the Scheme, and the adjacent construction compound for the East West Rail Connection Stage 3 development.

Operation Phase

6.10.8 During operation there would be a significant cumulative effect on the Granta River Valley LCA resulting from the combined landscape impacts from the Scheme and the South West Travel Hub. The landscape designs of both developments would mature over time, and it was predicted that after 15 years the landscape planting would reduce the impact magnitude and the cumulative effect would no longer be significant.

Proposed Mitigation

6.10.9 For most significant cumulative effects, mitigation to minimise the effects significance has already been proposed in either the Scheme, for the other project, or both. A single additional mitigation measure has been identified to minimise cumulative effects resulting from the potential disruption to Granham's Road from both developments using the road to access construction compounds. The mitigation seeks to minimise cumulative effects by minimising the overlap of construction programmes between the two developments as far as possible. This would need to be undertaken during construction planning.

Conclusion

6.10.10 There would be residual cumulative effects, as set out in Table 18.5 of the ES **[CD1-10.02, pages 342-347]**. These relate to cumulative effects to a loss of BMV soils, adverse landscape effects, damage to archaeological remains, and construction traffic disruption along Granham's Road.

7. KEY STAKEHOLDER ENGAGEMENT

7.1.1 Consultation has been undertaken with stakeholders on various environmental issues. A summary of the issues consulted upon, and the actions taken to address stakeholders' concerns is set out within this section of my Proof of Evidence. A full record of all consultation is reported in the Consultation Report **[CD1-05.01]**.

7.2 Natural England

7.2.1 Natural England raised concerns on the potential for impacts to barbastelle bats at the River Granta (Babraham) Crossing. These were in relation to the use of the River Granta as a commuting and foraging corridor for barbastelle bats and the risk that the proposed new bridge could impede commuting and there could be a risk of collisions of bats with buses using the bridge resulting in injury or mortality.

7.2.2 A package of additional measures were agreed with Natural England resulting in changes to the bridge design and surrounding landscape design to minimise collisions of bats with buses and maintain habitat continuity. Additional surveys were also undertaken and the results of these are reported on pages 568 to 572 of ES Appendix 10.2 **[CD1-10.32]**.

7.2.3 These additional measures addressed Natural England's concerns which was confirmed in their Representation **[CD2-REP-05]**.

7.3 Historic England

7.3.1 Following the receipt of Historic England's Representation **[CD2-REP-01]** which requested additional studies be undertaken, further consultation has been undertaken and the requested additional studies produced **[CD1-10.59 and CD1-10.60]** and provided to Historic England. Historic England have confirmed that they are satisfied with the submitted additional studies in their Statement of Common Ground **[CD23-03]**.

7.4 Environment Agency

7.4.1 The Environment Agency have been consulted on two issues, provision of aquatic habitats to achieve GCP's biodiversity net gain (BNG) aspirations, and flood risk. The BNG issue is covered in Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01]** and is not covered by my Proof of Evidence.

7.4.2 The second issue which the Environment Agency have been consulted on is the nature of the flood risk modelling, for which the Environment Agency have raised an objection. Further information has been provided to the Environment Agency to address their concerns through some minor updates to the Flood Risk Assessment **[CD1-10.23]** and the Flood Modelling Report **[CD1-10.24]**. The updates did not result in any changes to the assessment conclusions. The Environment Agency have confirmed that all flooding matters have been satisfactorily resolved, and their objection has been removed **[CD22-01]**.

7.5 Greater Cambridge Shared Planning Service (GCSP)

7.5.1 Regular discussions have been held with GCSP on various matters to do with the Scheme. The following issues are of relevance to my Proof of Evidence.

Biodiversity Net Gain

7.5.2 GCSP asked to review the calculations used to derive the BNG value reported in the ES **[CD110.42].** The metric spreadsheet and other relevant files were shared with GCSP so that their officers could validate the findings. This issue is set out in further detail in Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01, page 22]**.

Validity of ecology surveys

7.5.3 Ongoing discussions have been held with GCSP on the validity of survey data for individual species. Surveys are continuing to be updated to ensure data is up to date and relevant and GCSP are being kept informed on the progress of continuing surveys. This issue is addressed in further detail in Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01, page 21]**.

Impact of lighting on bats

7.5.4 GCSP ecology officers raised concerns over the impact of the Scheme's lighting impacts on bats. This has resulted in the strengthening of planting at specific locations to shield light spill on habitats used by bats as set out in the LEMP **[CD1-10.05]**. This issue is addressed in further detail in Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01, page 21]**.

Retention of the oak tree in the Travel Hub

7.5.5 GCSP requested that Oak Tree AT025 be retained since the Arboricultural Impact Assessment identified it as requiring felling due to the location of some cycle stands and the alignment of the busway impinging on the tree's root protection zone within the Travel Hub. The tree has now been retained in the landscape design following the revised Travel Hub layout, as described in the ES Addendum **[CD1-10.02.01, page 8].**

7.6 Hobson's Conduit Trust

7.6.1 Hobson's Conduit Trust have been consulted on aspects of the design that they have raised concerns over in their Objection **[CD2-OBJ-435 and CD3-26 OBJ-435].** Principally, these are:

1) The impact of Ecology Pond 3 and Attenuation Pond 1 on the lateral flows of groundwater to Hobson's Conduit
2) The proximity of the construction compound to Nine Wells LNR and Hobson's Conduit and the potential for pollution during construction
3) The dimensions of the proposed Hobson's Conduit Crossing and the impact on Hobson's Conduit
4) The impact on water quality of discharging surface water drainage to Hobson's Conduit, particularly during winter when the proposed busway could be gritted for de-icing operations

7.6.2 The views of Hobson's Conduit Trust have been considered, and it has been agreed with the Hobson's Conduit Trust to implement specific measures at the detailed design stage. To address the concerns on potential impacts to the lateral flows of groundwater, it has been agreed to remove Ecology Pond 3 from the landscape design and move Attenuation Pond 1 as far from the Nine Wells LNR as possible. Alternative mitigation to Ecology Pond 3 has been proposed in the form of bank side vegetation management to mitigate for water voles. This is covered in further detail in Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01].**

7.6.3 Attenuation Pond 1 would also have an additional treatment train in the form of a reed bed to provide additional attenuation and treatment to surface water runoff prior to its discharge to Hobson's Conduit. This would reduce the impact on water quality from de-icing operations. Further detail is set out in Mr Connelly's Proof of Evidence **[CD27-01 APP-W9-01].**

7.6.4 It has been agreed that the design of the Hobson's Conduit Crossing will maximise the bridge aperture, within the constraints of the design parameters, which would minimise the impact of shading from the bridge, and visual intrusion. Further detail is set out in Mr Connelly's Proof of Evidence **[CD27-01 APP-W9-01].**

7.6.5 It has been agreed that there will be a minimum 40 m buffer between construction compound 1 (referred to as construction compound 7 in the original ES **[CD1-10.02, page 31]**) and Nine Wells LNR and Hobson's Conduit.

7.7 John Meed

7.7.1 John Meed has been consulted in his capacity as a local naturalist who has undertaken monitoring for farmland birds in the area of the Site between Granham's Road and the Nine Wells Nature Reserve. Mr Meed has identified two fields and a particular hedgerow (hedgerow no. 3) as identified in the hedgerow survey report **[CD1-10.31]** that supports an unusually high number of farmland birds including notable species such as grey partridge, corn bunting, yellow wagtail, yellowhammer, skylark and linnet.

7.7.2 Following discussions with Mr Meed, the alignment of the busway was moved further away from hedgerow no. 3, and the intervening area is specified to be planted with Enhanced Grass Margin Planting which would provide cereals and legumes for farmland birds in winter and spring.

8. OBJECTIONS AND REPRESENTATIONS MADE RELEVANT TO MY EVIDENCE

8.1 Introduction

8.1.1 This section of my Proof of Evidence addresses representations and objections made by interested third parties. Each section sets out the main issues raised by the interested party and is then followed by my response.

8.2 Objections by Better Ways for Busways (BW4B) [CD2-OBJ-440 and CD3-23 OBJ-440] and The Association for Cultural Exchange [CD2-OBJ-08]

The Main Issues Raised

8.2.1 In relation to my evidence, BW4B's case is that there would be irreparable adverse environmental harm from the Scheme, citing the following specific ecological harms:

1) Impacts to the Nine Wells LNR, citing the Hobson's Conduit Trust objection [CD2-OBJ-435]

2) The potential removal of parcels of land between the busway and existing settlements from agricultural use

3) Both the BW4B objection and The Association for Cultural Exchange express an opinion that an alternative on-line option would avoid a range of environmental impacts to open countryside.

My Responses

8.2.2 My response to BW4B's case in relation to the alleged impacts to the Nine Wells LNR that result from pollution, and disruption of hydrological flows are covered in detail in my response to Hobson's Conduit Trust's objection in Section 8.3.6 to 8.3.16

8.2.3 Issues relating to biodiversity are responded to in Mr Watson's Proof of Evidence **[CD27-01 APPW5-01]**.

8.2.4 The potential removal of parcels of land between the Scheme and existing settlements from agricultural use is not proposed as part of the Scheme. Chapter 18 of the ES **[CD1-10.02, pages 330-349]** has assessed cumulative effects with other proposed schemes. No proposals for the development of parcels of land between the Scheme and existing settlements have been proposed.

8.2.5 Section 4.2 above sets out my evidence in response to an alternative option to the Scheme.

8.3 Representations by Hobson's Conduit Trust [CD2-OBJ-435 and CD3-26 OBJ-435], and The Cam Valley Forum [CD2-OBJ-447]

The Main Issues Raised

8.3.1 Hobson's Conduit Trust and The Cam Valley Forum have both objected to the Scheme due to a range of issues. Those issues which my Proof of Evidence addresses are as follows:

General environmental effects to Nine Wells Local Nature Reserve and Hobson's Conduit

8.3.2 In their Objection **[CD2-OBJ-435]**, Hobson's Conduit Trust state that the ES **[CD1-10.02]** underplays the importance of Hobson's Conduit and the Nine Wells LNR in terms of the receptor's historic, ecological, hydrological, geological and visual value. Hobson's Conduit Trust object to the phrasing used to characterise the predicted effects reported within the ES **[CD2OBJ-435, pages 15-21]**.

Impacts on the Grade II listed Nine Wells Monument

8.3.3 Hobson's Conduit Trust state that irreparable harm would be caused to the setting of the Grade II Nine Wells Monument **[CD2-OBJ-435]**.

Water quality and pollution control

8.3.4 Both Hobson's Conduit Trust **[CD2-OBJ-435, pages 24-25]** and The Cam Valley Forum **[CD2OBJ-447]** raise similar concerns on the impact of pollution on the water quality of Hobson's Conduit during construction, due to uncontrolled surface water runoff from the nearby construction compound and from construction vehicles crossing the watercourse on temporary bailey bridges. Hobson's Conduit Trust also raise concerns on water quality during operation due to the proposed discharge from the surface water drainage system with particular reference to de-icing salt applied to the busway which would wash into the drainage network and discharge to Hobson's Conduit.

Impact on groundwater and the effects on the Nine Wells springs

8.3.3 Concerns are raised on the location of Ecology Pond 3 and Attenuation Pond 1 to the south of Hobson's Brook. Both Hobson's Conduit Trust **[CD2-OBJ-435, page 26]** and The Cam Valley Forum's concerns **[CD2-OBJ-447, page 2]** relate to the potential for excavation of these ponds to disrupt shallow groundwater flows which have been observed to flow into Hobson's Conduit and provide a contribution to the flow of the brook. Concerns have also been raised on the impact of piling for the foundations of the proposed Hobson's Conduit crossing on groundwater flows which Hobson's Conduit Trust state could disrupt the springs at Nine Wells LNR.

My Responses

General environmental effects to Nine Wells Local Nature Reserve and Hobson's Conduit

8.3.4 The ES Main Report provides an objective assessment of the Scheme on Nine Wells LNR and LGS and Hobson's Conduit in Chapter 8 for effects on water quality **[CD1-10.02, pages 126-128]**, Chapter 9 for effects on the LGS **[CD1-10.02, page 139]**, Chapter 10 for effects on biodiversity **[CD1-10.02, pages 160-179]**, Chapter 11 for effects on landscape character and visual impact **[CD1-10.02, pages 200-235]**, and Chapter 12 for effects on the Grade II listed Nine Wells Monument **[CD1-10.02, pages 248-256].** Further assessment on the effect of the Scheme on the Grade II listed Nine Wells Monument was undertaken in the Addendum to the Desk Based Assessment **[CD1-10.60, pages 7-9]**. It is acknowledged that there would be adverse effects to these receptors during both construction and operation, but in the main, these effects would not be significant apart from visual effects during construction.

8.3.5 The use of terms negligible, neutral, and slight are an objective assessment of the predicted effects of the Scheme using defined terms set out in the relevant assessment guidance used to undertake the EIA.

8.3.6 Ms Bristow's Written Statement (Appendix 4, page 7) provides a response to issues relating to hydrogeology, Ms Surdevan's Written Statement (Appendix 3, page 11) provides a response to issues relating to water quality, Mr Ford's Written Statement (Appendix 5, page 10) provides a response to issues relating to the historic environment, Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01, page 27]** provides a response to issues relating to biodiversity, and Ms Macleod's Proof of Evidence **[CD27-01 APP W8-01]** provides a response to issues relating to landscape.

Impacts on the Grade II listed Nine Wells Monument

8.3.7 The Grade II listed Nine Wells Monument is located within the Nine Wells LNR and is well screened by the existing vegetation within the LNR. Chapter 12 of the ES Main Report **[CD110.02, pages 248-256]** assesses the effect of the Scheme on the historical setting of the Monument during construction as slight adverse and not significant, and during operation as negligible. Further evidence is provided in the Addendum to the Desk Based Assessment **[CD110.60, pages 7-9]**.

Water quality and pollution control

8.3.8 Acknowledging the sensitive nature of the Hobson's Conduit and the Nine Wells LNR, a precautionary approach has been adopted in identifying mitigation to minimise effects. At this stage, the exact construction details are not known and will not be known until detailed design stage. In line with the precautionary principle, all possible and reasonable mitigation that could be employed to minimise effects of pollution during construction and operation have been specified and are set out in detail in Chapter 8 of the ES Main Report **[CD1-10.02, pages 110-123]** as well as the draft Code of Construction Practice **[CD1-10.07]** and the draft Construction Environmental Management Plan **[CD1-10.08]**. In addition to these committed mitigation measures, there is sufficient room in the field adjacent to the Nine Wells LNR and Hobson's Conduit for there to be a 40 m buffer between the construction compound and these two receptors to provide further protection to surface water quality. The buffer is shown on the revised plans **[CD1-12.09.01]**.

8.3.9 Hobson's Conduit Trust have confirmed in their letter dated 23rd October 2026 **[CD23-04]** that they are very supportive of the amended construction compound plan and that it resolves their concern regarding the proximity of the compound to the Nine Wells LNR and Hobson's Conduit.

8.3.10 The Drainage Strategy **[CD1-10.04]** sets out the pollution prevention measures incorporated into the Scheme design in the form of SuDs. Further assessment will be undertaken at the detailed design stage, and additional features can be incorporated if the assessment deems them necessary. The drainage strategy makes provision for any required pollution prevention measure to be included in the Scheme design to adequately treat surface water runoff **[CD1-10.04, pages 29-31]**. Chapter 8 of the ES Main Report **[CD1-10.02, pages 110-123]** has assessed the effect of discharging surface water drainage from the Scheme on the water quality of Hobson's Conduit as slight adverse and not significant. As set out in Section 7.6 above, it has been agreed with Hobson's Conduit Trust that the detailed design of Attenuation Pond 1 will include a reed bed treatment train to minimise the impact on water quality from the discharge of surface water, particularly after de-icing. Condition 15 of the deemed planning application requires the local planning authority to approve the measures incorporated into the drainage design to prevent pollution to Hobson's Conduit.

8.3.11 A comprehensive list of mitigation measures identified to minimise construction effects on Hobson's Conduit are set out in Chapter 8 of the ES Main Report **[CD1-10.02, pages 110-123]**. The proposed temporary crossing would be clear span with abutments set back from the watercourse banks to prevent physical impact. The borehole log from the location of the proposed Hobson's Conduit bridge shows the underlying geology to comprise superficial alluvium and marl. The bridge piles will not be drilled into a water bearing geological unit with hydrogeological linkages to the Nine Wells LNR and so will not impact flows to the Nine Wells LNR or Hobson's Brook which are geologically distinct.

8.3.12 Further detail on water quality issues at Hobson's Conduit and Nine Wells LNR are provided in Ms Surdevan's Written Statement (Appendix 3).

Impact on groundwater and the effects on the Nine Wells springs

8.3.13 The nearest borehole to the proposed ecological and attenuation ponds is at the location of the proposed Hobson's Conduit Crossing which shows that the underlying geology comprises superficial alluvium on top of the marl bedrock. The marl dips to the east and becomes overlain by Totternhoe Stone and chalk. The intersection of the Totternhoe Stone and marl is the location of the Nine Wells LNR where the less permeable Marl forces groundwater moving along a gravity gradient from the nearby Gog Magog Hills to the surface as it reaches the Totternhoe Stone. Any groundwater to the west of the Nine Wells LNR is therefore assumed to be associated with the superficial alluvium layers and is not connected to the chalk aquifer feeding the springs at Nine Wells. Nevertheless, it has been agreed with Hobson's Conduit that Ecology Pond 3 will be removed from the landscape design, and the location of Attenuation Pond 1 will be as far away from the Nine Wells LNR as possible. These changes are shown on the amended proposed site plans **[CD1-12.05.01]**. This will minimise any impacts to lateral groundwater flows to Hobson's Conduit. Further details on hydrogeology issues relating to the Nine Wells springs are set out in Ms Bristow's Written Statement (Appendix 4).

8.3.14 Hobson's Conduit Trust have confirmed in their letter dated 23rd October 2026 **[CD23-04]** that they are very supportive of the removal of Ecology Pond 3 and that it resolves their concern regarding the potential impact from the pond on groundwater flows to Hobson's Brook.

8.4 Objections by Environment Agency [CD2-OBJ-465]

The Main Issues Raised

8.4.1 The Environment Agency originally objected to the Scheme on the basis of the software version of the model and the lack of inclusion of a description of the proposed flood compensation areas within the Flood Risk Assessment **[CD1-10.23].**

My Responses

8.4.2 Validation of the flood risk modelling has been undertaken and the Flood Modelling Report **[CD110.24.1]** produced to demonstrate that the conclusions of the flood risk modelling exercise remain valid. The Flood Risk Assessment **[CD1-10.23.1]** has been updated to show the location and key dimensions of the proposed flood compensation areas which were already reported within the Flood Modelling Report. The Environment Agency have confirmed that the updated reports satisfactorily address their concerns and have withdrawn their objection **[CD22-01].** Further detail is provided in Mr Rouse's Written Statement (Appendix 2 page 6).

8.5 Representations by Historic England [CD2-REP-01]

The Main Issues Raised

8.5.1 Historic England raise three main issues in their Representation as follows:

1) Designated Heritage Asset 1006891: Site Revealed by Aerial Photography West of White Hill Farm – the assessment of the heritage receptor within the ES does not adequately address the effect

2) Nine Wells Monument and Hobson's Conduit – impacts to hydrological flows have not been assessed as part of the heritage assessment

3) Comments on the ES Main Report – general comments on the ES but including a specific request for additional information in the form of a deposit model, and a detailed assessment of the effects on scheduled crop mark site west of White Hill and the Hobsons Conduit

My Responses

Designated Heritage Asset 1006891: Site Revealed by Aerial Photography West of White Hill Farm

8.5.2 Chapter 12 of the ES Main Report **[CD1-10.02, pages 229-251]**, provides an assessment of the effects of the Scheme on the historic environment. An addendum to the Desk Based Assessment **[CD1-10.60]** includes a more detailed assessment of the impact on Designated Heritage Asset 1006891: Site Revealed by Aerial Photography West of White Hill Farm. Mitigation has been agreed with Historic England as set out in the Heritage Mitigation Strategy **[CD1-27]**. Further detail is provided in Mr Ford's Written Statement (Appendix 5, page 9).

Nine Wells Monument and Hobson's Conduit

8.5.3 The Scheme will not significantly affect the hydrological or hydrogeological flows to the natural springs at Nine Wells LNR or Hobson's Conduit. See response to Hobson's Conduit Trust **[CD2OBJ-435]** (paragraph 8.3.15) for further information.

Comments on the ES Main Report

8.5.4 The historic environment assessment set out in the ES Main Report **[CD1-10.02, pages 229-251]** assumes a worst-case scenario, where there is the potential for all archaeological assets within the Scheme footprint to be lost or truncated resulting in significant adverse effects. Whilst the assessment focuses on damage to buried archaeology from construction activities, this would also include any impacts from landscape planting due to root damage, and the implementation of biodiversity mitigation including pond excavation and the creation of artificial badger setts. The piling design has not yet been undertaken and so the pile depths are not known. This would be undertaken at the detailed design stage and would be informed by a piling risk assessment. The historic environment assessment assumed that any underlying archaeology in piling locations would be lost or truncated as a result of the works.

8.5.5 Further archaeological evaluation has been agreed with Historic England through the Heritage Management Strategy **[CD1-27]**, which would include any areas of peat and alluvium deposits, which could mask archaeological remains, as well as further evaluation of the known buried archaeological assets.

8.5.6 There are not anticipated to be any significant effects to groundwater from the Scheme, see response to Hobson's Conduit Trust Objection **[CD2-OBJ-435]** (paragraph 8.3.15).

8.5.7 It is not anticipated that the Scheme will cause any contamination to ground resources including buried archaeological remains.

8.5.8 Additional documents requested by Historic England, including a deposit model of the River Granta crossings **[CD1-10.59]**, and a detailed assessment of significance and setting for the archaeology around the scheduled crop mark site west of White Hill and the Hobsons Conduit **[CD1-10.60]**, have been submitted to Historic England as further evidence to support the conclusions in the ES. Historic England has confirmed that these documents are satisfactory as set out in the Statement of Common Ground **[CD23-03].** Further detail is provided in Mr Ford's Written Statement (Appendix 5, page 10).

8.6 Representations by GCSP [CD2-REP-04 and CD3-20 REP-04]

The Main Issues Raised

8.6.1 The matters raised in GCSP's Representation **[CD2-REP-04]** and Statement of Case **[CD320.01]** that are relevant to my Proof of Evidence are:

1) Further consideration of the construction impact on Hobson's Brook and Nine Wells Local Nature Reserve, and consideration of alternative proposals and/or mitigation measures

2) Further assessment of the operational impact on Hobson's Brook, and consideration of alternative proposals and/or mitigation measures

3) Clarification of impact on trees

4) Built heritage – GCSP agree with the conclusions in the ES that there would be no significant effects on built heritage assets.

5) Trees – the retention of oak tree AT025 at the Travel Hub

6) Contaminated land – management of potential risks during construction

7) Noise impacts – agreement with the conclusions of the ES

8.6.2 Other environmental related issues raised by GCSP in relation to biodiversity are covered in Mr Watson's Proof of Evidence **[CD27-01 APP-W5-01]** and in relation to landscape in Ms Macleod's Proof of Evidence **[CD27-01 APP-W8-01]**.

My Responses

Built heritage

8.6.3 Although there is agreement that there would be no significant adverse effects on built heritage assets, GCSP have requested that the Heritage Mitigation Strategy incorporates mitigation for impact to built heritage. The Heritage Mitigation Strategy has been agreed with the County Archaeologist.

Trees – the retention of oak tree AT025 at the Travel Hub

8.6.4 GCSP requested that Oak Tree AT025 be retained since the Arboricultural Impact Assessment **[CD1-10.47]** identified it as requiring felling due to the location of some cycle stands and the alignment of the busway impinging on the tree's root protection zone within the Travel Hub. The Travel Hub has been reconfigured as part of Change Request 1 **[CD24-04]** and the revised design incorporates tree AT025 into the landscape design. In addition, the tree's retention has been secured through mitigation measure LV2 **[CD1-10.02, page 227].**

Contaminated land – management of potential risks during construction

8.6.5 GCSP agrees with the conclusion in the ES that land contamination is not deemed to give rise to significant effects subject to the necessary mitigation measures being secured by Condition 6 of the deemed planning application.

Noise impacts – agreement with the conclusions of the ES

8.6.6 GCSP agrees with the conclusions of the ES subject to the proposed mitigation being secured by Condition 9 of the deemed planning application.

8.7 RailFuture East Anglia [CD2-OBJ-256 and CD3-08 OBJ 256]

The Main Issues Raised

8.7.1 RailFuture East Anglia state that the Travel Hub would lead to an increase in traffic congestion and environmental impacts by encouraging car journeys to the Travel Hub.

My Response

8.7.2 The issue of traffic congestion is covered in Mr Shipley's Proof of Evidence **[CD27-01 APP-W401].** Issues relating to air quality and carbon emissions are covered in Ms Sykes' Proof of Evidence **[CD27-01 APP-W6-01]**. The other environmental impact which could arise from increase traffic travelling to the Travel Hub would be from noise. Noise impacts from traffic once the Scheme is operational have been modelled and the results are shown on the Modelled Operational Noise Maps **[CD1-10.21].** Ms Wills Written Statement (Appendix 1, page 10) states that there would be no significant noise effects noise at properties closest to the Travel Hub.

9. OTHER ISSUES RAISED BY THIRD PARTIES

9.1 Wide Ranging Objections

9.1.1 A large number of very similarly worded objections were received which raised concerns with a wide range of issues. The issues of relevance to my Proof of Evidence relate to the environmental effects of the Scheme. Concerns were raised about the potential negative effects from pollution and disruption to water bodies (River Granta, Hobsons Conduit chalk stream).

9.1.2 In response, the ES Main Report **[CD1-10.02, pages 110-123, 140-182]** acknowledges the potential for impacts to water quality including the River Granta and Hobson's Conduit (Chapter 8). Mitigation measures have been identified and specified to minimise any harm during construction and operation in the ES **[CD1-10.02, pages 129-131]** and the ES Addendum **[CD110.02.01 page 14]** and are secured through Conditions 9 and 15 of the deemed planning application.

10. CONCLUSION

10.1.1 All large-scale infrastructure developments have environmental effects, and the acceptability of these effects is a matter for the Secretary of State to determine against the benefits of the development. Ms McDade's Proof of Evidence sets out the planning balance for the Scheme **[CD27-01 APP-W10-01]**. The environmental effects identified in the ES **[CD1.10-02]** for the Scheme are typical of any large-scale development located in a mostly greenfield rural environment. Where environmental effects have been identified, these have been mitigated as far as reasonably practicable and in accordance with the mitigation hierarchy. There remain significant residual environmental effects, as would be expected for such a development in such a location, after the mitigation has been implemented. It is the Secretary of State's duty to take these residual effects into account when weighing the planning balance of the Scheme and determining whether to make the Order and grant deemed planning permission for the Scheme.

10.1.2 With regards to the Statement of Matters dated 19 October, my Proof of Evidence has addressed the following relevant matters:

1) That the ES in Chapter 4 has described the reasonable alternatives to the Scheme [Section 4.2] [Statement of Matters dated 19 October reference 3]
2) What the potential environmental impact of the proposed activities will be on drainage, material use and non-biodiversity impacts on the River Granta and Hobson's Conduit (Section 6.3), and the Nine Wells Local Nature Reserve (Section 6.4) (Statement of Matters dated 19 October reference 4.a)
3) What the impact of the proposal will be on areas of historical or cultural significance (Section 6.5 (Statement of Matters dated 19 October reference 4.d)
4) The implication of the acquisition of arable farmland (Section 6.4) (Statement of Matters dated 19 October reference 4.e)

5) The potential noise pollution caused by the Scheme (Section 6.2 and Appendix 1) (Statement of Matters dated 19 October reference 4.g)

11. STATEMENT OF TRUTH

11.1.1 The evidence which I have prepared and provided in this Proof of Evidence is true and is given in accordance with the guidance of my professional institution. I confirm that the opinions expressed are my true and professional opinions.

APPENDIX 1 VICKY WILLS' WRITTEN STATEMENT ON NOISE AND VIBRATION

APPENDIX 2 TOM ROUSE'S WRITTEN STATEMENT ON FLOOD RISK

APPENDIX 3 ROSHNI SURDEVAN'S WRITTEN STATEMENT ON SURFACE WATER QUALITY

APPENDIX 4 KATIE BRISTOW'S WRITTEN STATEMENT ON HYDROGEOLOGY

APPENDIX 5 ALAN FORD'S WRITTEN STATEMENT ON CULTURAL HERITAGE