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The Cambourne to Cambridge Order

Cambridgeshire County Council

Summary OF EVIDENCE

of

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of WSP

On behalf of Cambridgeshire County Council

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CONTENTS

Section	Page
1. INTRODUCTION	1
1.1 Qualifications and Experience	1
1.2 Scope of Evidence	1
1.3 Summary of Evidence	1
2. REPRESENTATIONS MADE RELEVANT TO MY EVIDENCE	4
2.1 Summary of points made and impact of the scheme on OBJ52 Coton Orchard Limited, Houston Crest Properties Limited and Anna Gazeley	4
2.2 Summary of points made and impact of the scheme on OBJ175 Gough Way Residents Association (K Fry)	5
2.3 Summary of points made and impact of the scheme on OBJ54 S Lucy	5
2.4 Summary of points made and impact of the scheme on OBJ213 Clare Hall, University of Cambridge	5
2.5 Summary of points made and impact of the scheme on OBJ251 CPPF & Coton Parish Council (Richard Buxton)	6
3. CONCLUSIONS AND SUMMARY	6
3.1 Matter 4a	6
3.2 Matter 4b	6
3.3 Matter 5	6
3.4 Matter 6d	6

1. INTRODUCTION

1.1 Qualifications and Experience

I hold a Bachelor of Engineering (Honours) degree in Civil Engineering from the University of Leeds and a Master of Sciences degree in Engineering Management from the University of Loughborough.

I am a Chartered Engineer, and a Fellow of both the Institution of Civil Engineers and the Geological Society of London, and a member of the Chartered Institution of Highways & Transportation, the Permanent Way Institution and the Association of Project Management.

I have over 39 years of construction experience, primarily working on transport infrastructure construction and upgrades, initially with a civil engineering contractor, then with a consultant in developing construction and delivery strategies for projects in the preconstruction phase.

I am Technical Director with WSP, and the WSP Technical Discipline Lead for the Construction and Logistics team.

I have been the WSP Construction Lead on the GCP Guided Busway Scheme since 2020, working as part of the WSP multidisciplinary design team. I have developed the construction strategy and programme and been part of developing the engineering design where it impacts stakeholders and the existing highway network.

1.2 Scope of Evidence

- 1.2.1 The evidence I have presented in this Proof of Evidence (PoE) does not unnecessarily replicate the technical information presented in the Environmental Statement (ES) (CD1-10.01) that was submitted as part of the TWA Order application material for the Scheme. Instead, it signposts where relevant information may be found in the ES and addresses issues raised by statutory consultees and objectors. Append CPP report
- 1.2.2 The scope of my evidence and the issues addressed are summarised in the section below.

1.3 Summary of Evidence

- 1.3.1 My evidence is set out in the order below:
 - (a) **Standards and guidance** - I explain which standards were used and their relevance to the design of the guided busway. The busway alignment has been equated to that of a single carriageway highway as set out in Method 2 of the Britpave - Guided Busway Design Handbook 2017 (BGBD) [CD9-04, Appendix B, paragraph B2, page 43]. Other highway design standards were also used, and these are explained.
 - (b) **Guidance system** - It is envisaged that the project will implement Intelligent Speed Assistance Technology - already proven successful on the Cambridgeshire Guided Busway since 2023 - to maintain optimal speeds for both safety and passenger comfort. Full details of the guidance technology and vehicle design for the Scheme have not been fully defined at this stage of the project.
 - (c) **Horizontal and vertical alignment** - The busway alignment has been equated to that of a single carriageway highway as set out in Method 2 of the BGBDH [CD9-04, Appendix B, paragraph B2, page 43]. Method 2 in the BGBDH refers to the

DMRB standard TD 9/93 which has now been superseded by the DMRB Standard CD 109 [CD9-07]. The geometric design parameters for single carriageway highways are set out in CD 109 [CD9-07], including curvature, gradient, and sightline requirements. Both horizontal and vertical alignments have also been carefully developed to integrate with existing and proposed developments, infrastructure, and the site's natural topography

- (d) **Junctions** - The DMRB standard CD 123 [CD9-08] has been used for the preliminary design of the junction layouts which will be developed within the constraints of the final Order and the Environmental Statement as the detailed scheme design progresses.
- (e) **Cross sections** - The cross section varies along the route. Indicative sections at key locations are provided in the Proposed Site Sections [CD1-16.05], which form part of the deemed planning drawings. Main Carriageway (Guided Busway) - The main carriageway is a core element of the Scheme, forming the running surface for the proposed sensor-based guided transport system, and a 7.3m wide carriageway is proposed. Emergency and Maintenance Access Track –This is a core part of the Scheme and the need for this is outlined, the four requirements are:
 - (i) First, the track will enable maintenance teams to access the Scheme to carry out routine maintenance activities without disrupting bus services or creating a potential safety hazard.
 - (ii) Secondly, the track will also provide a utility corridor for the Scheme, and create opportunities for existing utilities impacted by the Scheme to be relocated outside the main busway. Safe access for inspection and maintenance of utilities can be achieved without disrupting the flow of bus services.
 - (iii) Thirdly, the track reduces the risk of pedestrian and cyclist incursions providing them with a safe dedicated shared path. This removes risk of obstruction and hazard from the busway.
 - (iv) Fourthly, in times of emergency, the track provides a safe evacuation route and access for emergency vehicles.
- (f) **Interaction with existing rights of way** - The Scheme intersects with several private access routes used by local residents and businesses. While there is a need to close some of these private means of access to build and safely operate the proposed busway, the Scheme ensures that no one loses their vital connections.
- (g) **Speed management** - A speed management and enforcement strategy are expected to be developed in the subsequent detailed design stages. This strategy will confirm the final control measures that will be implemented to ensure adherence to speed restrictions by all vehicles authorised to use the busway. Preliminary operational speed restrictions for each section of the route have been established and these are shown on the Proposed Site Plans [CD1-16.04] which form part of the deemed planning drawings. It is envisaged that the

project will implement Intelligent Speed Assistance Technology - already proven successful on the Cambridgeshire Guided Busway since 2023 - to ensure adherence to the operational speed restrictions by public transport vehicles.

- (h) **Safety** - The Scheme is committed to delivering safety and engineering excellence. The design draws upon the relevant design standards including the Design Manual for Roads and Bridges (DMRB) [CD9-06 to CD9-14], the specialised Britpave Guided Busway Design Handbook [CD9-04], Manual for Streets 2 [CD9-03] and the National Guidance contained in relevant Local Transport Notes [CD8-23]. The Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS) provides a recognised and robust framework for managing safety in guided transport systems. Its application to the Scheme offers assurance that safety risks have been systematically identified, assessed, and mitigated. This includes independent external review of the safety work undertaken, thereby reinforcing confidence in the integrity of the design and the effectiveness of the safety measures implemented.
- (i) **Evolution of the scheme design** - The design submitted for the TWAO application has been developed to a level of detail which is broadly in line with that required for outline planning permission. Aspects of the scheme design are reserved matters in the draft conditions, and the final details for these aspects will be developed within the constraints of the final Order and the Environmental Statement as the scheme progresses, following further consultations with statutory bodies and affected landowners throughout the subsequent detailed design stages of the project. The interaction with other schemes which will be delivered concurrently and impact the Scheme are described.
- (j) **Scheme construction** - I outline the construction approach; a more detailed construction phasing, methodology and programme will be developed and refined during the detailed design stage of the project. Construction is anticipated to be undertaken over a period of approximately 24 months, with work sequenced to suit the type of work, economic use of resources, traffic management requirements, seasonal constraints, etc. Thus, work will not be carried out in all areas of the works for the full duration of the programme and will progress on a series of work fronts.
- (k) **Scheme operation** - The Scheme has been envisaged to form part of a wider network of busways serving the city. Developments in technology mean that transport systems can now be guided by non-physical means. This includes the use of simple sensor systems that detect paint or other road markings to direct a vehicle, or more complex sensor systems which read the surrounding environment to direct a vehicle.
- (l) **Extent of land and rights required - permanent and temporary - Matter 6d** - In order to construct the Scheme works to be authorised by the Order, permanent acquisition of land, the temporary possession of land and the temporary use of land for access will be required over third-party land/property.
- (m) **Effect on EWR - Matter 4a** The new railway infrastructure planned between Bedford and Cambridge is part of the third stage of EWR which is still in planning and is dependent on final government funding and approval, the project teams

on both EWR and the Scheme are actively engaging in ongoing discussions to ensure effective coordination.

- (n) **Effect on pedestrians, cyclists and motorists - Matter 4b** - The realignments and stopping up of vehicular highways and Public Rights of Way are each outlined, The stopping up of part of the former A428 is necessary to remove an existing area of highway which became redundant when the A428 was previously realigned and upgraded to a dual carriageway. The stopping up of St Neots Road is necessary to remove an existing area of highway which will become redundant as a result of the proposed realignment of St Neots Road which forms part of the Scheme proposals. The proposed route is intersected by four existing public rights of way, predominantly to the east of the route as follows and covered separately in my evidence:
- (i) Bridleway 39/30: runs between the A1303 Madingley Road and the M11 footbridge, to the east of the M11.
 - (ii) Footpath 39/31: connects with Bridleway 39/30, running east to Wilberforce Road.
 - (iii) Footpath 55/2: runs between A1303 Madingley Road and High Street, Coton.
 - (iv) Footpath 66/17: runs from Dry Drayton to the A428 to the north of Hardwick, running east of the travel hub. Includes a footbridge over the A428 to the southeast of the Travel Hub before meeting the guided busway.
- (o) **Impact on statutory undertakers - Matter 5** - The Fens Reservoir and associated infrastructure. Anglian Water and Cambridge Water are proposing a new reservoir, discussions between the two project teams are ongoing and this collaboration will continue to ensure that any interfaces between the two transformative infrastructure projects will avoid conflict with each other. A number of utility diversions are required, principally within highway boundaries, of existing utility services are located within the Order Limits that may be affected by the Scheme. These include existing overhead and underground electricity distribution network cables, water and drainage pipes and medium pressure gas mains. In addition, communication network apparatus may be affected, including the UoC's Granta Backbone Network.

2. REPRESENTATIONS MADE RELEVANT TO MY EVIDENCE

2.1 Summary of points made and impact of the scheme on OBJ52 Coton Orchard Limited, Houston Crest Properties Limited and Anna Gazeley

- 2.1.1 This objection suggests that 'The construction impacts, such as pollution, noise, and landscape scars are environmentally damaging'.
- 2.1.2 While some adverse noise impacts are unavoidable, they will be temporary and appropriately minimised via the adoption of LEMP, the prohibition of construction vehicles using the road south of the busway, limits on working hours, and the minimization of construction compounds in this area.

- 2.1.3 The design of the busway minimises the corridor width in this area, and both construction compounds and drainage basins have been located away from the orchard.
- 2.1.4 The construction contracts will include compliance with the Code of Construction Practice [CD1-26]
- 2.1.5 The permanent works design includes the design and implementation of landscape mitigation to reduce the long-term impact on the local area, and to ensure that the biodiversity is maintained and improved.

2.2 Summary of points made and impact of the scheme on OBJ175 Gough Way Residents Association (K Fry)

- 2.2.1 The Main issues raised are the safety of users of the section of the route along Rifle Range Road, the increased risk of flooding in this area and to the north and the safety impact on Grange Road of the new junction.
- 2.2.2 The maintenance and access track has been designed to allow for the anticipated usage, in terms of width, alignment and visibility, and the standard Scheme width of 3.5m for this has been included in the design along Rifle Range Road. There is also separation between the access track and busway. It is anticipated that some of the active travel users on the maintenance track will use the existing route to the north of Clare Hall.
- 2.2.3 During construction, the use of Grange Road will be minimised, and Grange Road will only be used when unavoidable for the construction of the new junction works. The construction of the works in this area will be accessed from the west.
- 2.2.4 The junction will be designed to current DMRB standards, and when operational the junction will be controlled with traffic signals, this will cover all vehicle movements, and the junction will be the subject of a Road Safety Audit.
- 2.2.5 The design has included flood modelling and minimises the impact on the Bin Brook, and these constraints will be included in the construction contracts, covering both temporary work and construction compound location and design. [Flooding assessment CD1-11.13.02 and Jack Southern [CD26-01-APP-W9-1]

2.3 Summary of points made and impact of the scheme on OBJ54 S Lucy

- 2.3.1 The objector suggests the use of the existing A428 and entering Cambridge from the north.
- 2.3.2 The alternative alignments were considered during the development of the design,, and the option development and selection of the final route is set out in the Outline Business Case [CD1-20.13].
- 2.3.3 An outline of this proposal was developed by CPPF, and our response to this is included in the CPPF Report in CPPF Alternative Scheme – Engineering Assessment [CD9-31]

2.4 Summary of points made and impact of the scheme on OBJ213 Clare Hall, University of Cambridge

- 2.4.1 The Main issues raised are concerns over the impact on the current and future work and planned developments of Clare Hall, including access along Rifle Range Road., for maintenance, delivery, and operational purposes.

- 2.4.2 Discussions on the detailed design of the access and maintenance track in this area have commenced, including for the opportunity to use the proposed access track for the access and maintenance of Clare Hall's property, and the planting to shield the windows overlooking the track.
- 2.4.3 Existing rights of access, for example Clare College, St John's College, Jesus College, the Rifle Range and emergency vehicles and Blue light vehicles will be maintained, and the maintenance track offers the opportunity for access in this area.
- 2.5 Summary of points made and impact of the scheme on OBJ251 CPPF & Coton Parish Council (Richard Buxton)**
 - 2.5.1 They prefer the use the existing A428 and enter Cambridge from the north
 - 2.5.2** The alternative alignments were considered during the development of the design, , and the option development and selection of the final route is set out in the Outline Business Case [CD1-20.13].
 - 2.5.3** An outline of this proposal was developed by CPPF, and our response to this is included in the CPPF Report in CPPF Alternative Scheme – Engineering Assessment [CD9-31]
- 3. CONCLUSIONS AND SUMMARY**
 - 3.1 Matter 4a**
 - 3.1.1 In relation to Matter 4a, I have explained the design of the scheme, and the mitigations of the impact effect of the implementation, operation and maintenance of the scheme, and confirmed that discussions with EWR are being undertaken.
 - 3.1.2 I have also addressed Matter 4a: the effect on East West Rail land safeguarded for the construction of a new railway between Bedford and Cambridge and the upgrading of existing railway between Oxford and Bedford.
 - 3.2 Matter 4b**
 - 3.2.1 In relation to Matter 4b, I have explained the design of the scheme, and the mitigations of the impact on residents, pedestrians, cyclists, and motorists, going through the individual interfaces. I have included details of the interfaces with the highway and NMU network and how we have included these in our design.
 - 3.3 Matter 5**
 - 3.3.1 For Matter 5, I have explained how we mitigated the effects of the scheme on statutory undertakers, statutory utilities and other utility providers. Discussions with the statutory undertakers have commenced and will continue through the detail design stage.
 - 3.4 Matter 6d**
 - 3.4.1 In relation to Matter 6D, I have explained why the land and rights over land which CCC has applied for are necessary to implement the scheme
 - 3.5 Summary**
 - 3.5.1 The land identified in the Order is essential to accommodate the various components of the Scheme, ensuring compliance with design parameters and enabling safe, efficient

operation. As the Scheme progresses, its design will be refined within the limits set by the final Order and the Environmental Statement. The land included is demonstrably required to deliver a technically feasible, safe, and sustainable guided busway system that serves the public interest.